Report of

The Maryland Agricultural Society—
The Maryland Farm Bureau, Inc.

INCLUDING REPORTS OF THE

Maryland State Horticultural Society,
Maryland Crop Improvement Association,
Maryland State Beekeepers' Association,
Maryland Vegetable Growers' Association,
Maryland Stockmen's Association,
Maryland Tobacco Growers' Association,
Maryland State Poultry Council,
Associated Women of the Maryland Farm Bureau,
4-H Club Conference.

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REPORT OF THE

MARYLAND AGRICULTURAL SOCIETY

THE

MARYLAND FARM BUREAU, Inc.

Including Reports of

The Maryland State Horticultural Society
The Maryland Crop Improvement Association
The Maryland State Beekeepers' Association
The Maryland Vegetable Growers' Association
The Maryland Stockmen's Association
The Maryland Tobacco Growers' Association
Maryland State Poultry Council
Associated Women of the Maryland Farm Bureau
4-H Club Conference

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BALTIMORE, MD.

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LETTER OF TRANSMITTAL

To His Excellency, Herbert R. O'Conor,
Governor of Maryland.

Sir:

I herewith submit to you, as directed by the Act incorporating the Maryland Agricultural Society, and also the Horticultural Society, this report for the year 1938, which contains a detailed statement of the receipts and expenditures of the Society as approved by the Executive Committee and Advisory Council. It contains the proceedings of the Twenty-third Annual Meeting of the Maryland Agricultural Society, Maryland Farm Bureau, Inc., and annual meetings of the Affiliated Associations.

I trust that an inspection of its contents will convince you that the funds appropriated for this purpose have been wisely and judiciously expended.

Respectfully submitted,

CHARLES E. WISE, JR.,
Secretary.

February, 1939,
Baltimore, Md.

79921

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REPORT

OF THE

TWENTY-THIRD ANNUAL MEETING

OF THE

Maryland Agricultural Society
Maryland Farm Bureau Federation

January 12 and 13, 1939

Lord Baltimore Hotel, Baltimore, Maryland

FARM BUREAU DAY—THURSDAY, JANUARY 12

MORNING

Songs at 9.30 led by Mr. M. L. Sutton, and later by Mr. W. R. McKnight.

Meeting called to order by President H. H. Nuttle at 9:45.

MR. NUTTLE: We will now bow our heads for the invocation after which I will present the Chairman for the morning session.

Father in Heaven, we thank Thee for the privilege of working together for the advantage of rural areas. We believe in the necessity of our work, that it is absolutely necessary and vital for the forces of the nation that the rural areas be protected. We thank Thee for the sacrifices that so many of these good people have made for the Farm Bureau. May we build it bigger and better than we have ever known. This we ask in the name of Thy Son, Amen.

I now present the Chairman of the meeting. He is President of the Farm Bureau in the County in which they have had the highest percentage of membership. Kent County is a county of big farms, and consequently a small number of farmers in the farming area, but in Kent County we have had a higher percentage of the total farmers in the county than in any other county. They also have a cooperative over there that is doing a wonderful job for the county. It is, indeed, with a great deal of pleasure that I present Mr. Howard Leaverton to preside this morning.

MR. LEAVERTON: We will first have the President's annual address by the President of the Maryland Farm Bureau, Mr. H. H. Nuttle.

PRESIDENT'S ADDRESS

H. H. NUTTLE, President

I again bring you my annual report. It hardly seems possible that twelve months have passed and that a year can be so short. But when each day is crowded with activities, weeks and months soon roll by. This will probably be my last report as your President, for I am not a candidate for re-election. I appreciate more than I can tell you the honors you have given me. I appreciate the loyalty of you Farm Bureau members and officers, and the many sacrifices you have made to our cause of farm organization.

I have given my best to the job to which you elected me and have enjoyed it, but find I am spread out too thinly, so that I have to neglect part of the numerous duties that seem to gravitate my way. Inasmuch as in Vice-President Phil Turner and several others on the Board of Directors you have men who are more than able to take my place, I am stepping aside as President. I will be your representative on the Board of Directors of the American Farm Bureau Federation for two years; that is, if you send me as your voting delegate to Chicago next December. At New Orleans I was also named head of the North-Eastern Presidents and Secretaries for 1939. Also I understand I am to remain as a director of Maryland Farm Bureau for five years as past president, so you see I am not getting out of Farm Bureau, I am just dividing up the responsibility of leadership somewhat by stepping aside.

I wish to welcome the new additions to our Farm Bureau family. Some families do not know when their circle is complete, but we do, and we hereby declare that twenty-three is the right number to make up our Maryland Farm Bureau. We are delighted to have Allegany and Garrett Counties with us in this Convention, and as their help will enable us to do a better state-wide job, so will our united action as certainly benefit them in their local problems.

I would like to introduce to you the representatives from Allegheny and Garrett Counties. Will the president—Mr. R. C. Wilson, of Allegany County Farm Bureau stand. Now will the other representatives of Allegany present stand. Now will the president of Garrett County—Mr. Wm. Winterberg please stand. Will the other members present from Garrett stand.

I desire to acknowledge again our indebtedness to the University of Maryland and especially to the Extension Service. President Byrd has been making the best Farm organization speeches at our Farm banquets, that I have heard in years. At some future time, if he should decide to give up the Presidency of the University of Maryland, I offer him the position of fieldman for the Maryland Farm Bureau. The pay will be much less than he is now getting, but think of the pleasure he would get out of such a job. I suggest that Martin Sutton and Wilbert Smith pay particular attention to this part of my speech.

Seriously, we in the Farm Bureau lean upon the University and the Extension Service at all times and they never fail us. Dr. Symons and Miss Kellar are wise counselors, always with us when needed, while the County and Home Demonstration Agents are friends indeed.

Nineteen-thirty-eight has been a year of low prices and consequently low farm income. Under such conditions, it is almost impossible for us farmers to make our books come out in the black. We are the only large group in the nation which buys in a protected market and sells in a world market. Furthermore, we go on producing to a large degree regardless of surpluses, and low prices. So, I have come to the conclusion that we should have some sort of production control.

With modern science and machinery, the farmer is 10 times as efficient as in 1787, and with exports largely cut off, we cannot continue to produce blindly. The automobile manufacturer does not build more autos than he can sell at a profit. The storekeeper does not load his shelves with more goods than his community will buy. I know you will hear that growing food and clothing is different. You remember Dr. Symons' talk a couple of years ago when he said "Too much wheat, not enough bread, too much wool, not enough clothing". That is true and should not be, but the trouble is not with the farmer—it's distribution The farmer gets only 42% of the consumer's dollar. The AFBF in New Orleans recognized this problem by adopting a resolution asking Federal and State Agricultural institutions to place research, teaching and extension work in distribution and marketing on a plane equal with that of production. The emphasis for years was on making two blades of grass grow where one grew before. Now we want to learn how to sell and distribute the two we do grow. However, given perfect distribution, the farmer can still produce more than the country will consume. So I am glad that under the Agricultural Adjustment Act we are trying a limitation of wheat acreage. If that works, and I think it will, then we should extend it.

This production control in major crops is only one of the features of the AAA. In addition, it has secured for the farmer, payment for soil conservation practices, commodity loans to enable farmers to withhold seasonal surpluses from the market, some stabilization of prices through purchases of surplus products, establishment of research laboratories to seek new uses for agricultural commodities, and the beginning of a practical program of crop insurance. The Farm Bureau was, and still is, active in its advocacy of these measures. Some of them may not work. If they do not, then we'll try something else. We can not cure our economic ills by sitting back and bewailing our lot.

The outstanding problem the Maryland Farm Bureau has had on its hands since 1929, has been the Agricultural Corporation. In the early years of its existence, it meant a great saving to the farmers of Maryland on their purchases of feed and fertilizer. But since 1930, competition became keener, volume of business diminished, per unit cost increased until the corporation operated in the red and its capital was

gradually impaired. Southern States then entered the State with its own manufacturing facilities, plenty of capital and experienced executives. Their offer to exchange their stock for that of the Agricultural Corporation, dollar for dollar, was a liberal one and has been accepted by the officers and stockholders of that corporation. Nearly 50% of the stock has been sent in to our office for transfer. When 50% is in, which should be in the next two weeks, the transfer will be completed and you should soon receive your Southern States' stock.

The presence of Southern States in Maryland has meant lower costs for our farmers and in those counties where Southern States and Farm Bureau interests are not competitive, every effort should be made to work together. Southern States can and should help Farm Bureau and Farm Bureau should talk Southern States. I know the aggressive sales policy of Southern States causes hard feelings. Yet I have faith in the good sense of the leaders in both groups that such differences will be ironed out and this rapidly growing cooperative bring new and larger benefits to Maryland. I wish to call your attention to the cooperative set up in Kent County. It is a Farm Bureau Co-op. It handles Southern States feed and fertilizer and seed exclusively. Patronage refunds from Southern States go back to the Kent County organization and they in turn pay their own dividends to their customers. Would not such a set up work in Harford, or Baltimore or Washington counties? I suggest to the leaders in those counties that they think earnestly along these lines.

I wish to congratulate you upon your work on the Income Tax amendment. We lost but the issue is not dead. We will probably have a flat rate income tax passed by the Legislature with agitation for another submission of a Constitutional amendment to the people. Certainly a tax based on income is more equitable than a property tax. The Baltimore Sun repeatedly comes out with its advocacy of an increase in the State Real Property tax. I will make a proposition to them. If they will agree to vary the subscription price of their morning paper as the price of corn and wheat varies—with $6.00 being their price when corn is 60c and wheat is $1.00 f.o.b. farm, that would mean on the basis of 50c corn and 70c wheat they would now charge $4.50 for the Morning Sun, then I would be willing to ride awhile with them on their proposal.

Little as I favor a general sales tax, and I hope we will never have one, yet I would support that in preference to a substantial increase in State real property taxes. Frankly, I think real property levies should as soon as possible, be reserved exclusively for municipalities and counties and the State raise its money in other ways. Delaware now does what I am here advocating for Maryland.

The longer I work in Farm Bureau and the more I see of its activities, the more I believe in its value. Picture the Maryland Farm Bureau, with 23 counties and 4,300 farm families. Picture the American Farm Bureau Federation with 39 states and 400,000 farm families. We need the power of such an organization because in buying and selling we

must deal with large corporations. We need the power of its organization in legislation to see that the conditions under which we live and work shall be fair and equitable as compared with Labor and Capital. But there is more to our fight than that. The welfare of the whole nation depends upon the welfare of rural areas.

Thomas Jefferson in 1787 wrote Madison from Paris saying: "Popular government will be safe in the United States as long as agriculture is our principal object. When we become piled upon one another in large cities, as in Europe, we will go to eating one another as they do there".

Recent developments in Europe and their threat to all democracies tend to confirm Jefferson's diagnosis. The big cities with their bread lines, political corruption and concentration of wealth breed communism and fascism. On the other hand, farmers know they can't obtain something for nothing. In the words of Secretary Wallace, "They know they have to plow and kill the weeds and feed the animals night and morning. Day after day farmers are subject to the discipline and hard work which comes with weather and crops and animals. They know there is no magic road to prosperity. They know they will have to do the work or the work will not be done. Therefore, farmers more than any other people, prize the freedom which comes from discipline, the rights which come from responsibility and the privileges which come from due restraint."

And we in Farm Bureau, as we protect such seed beds of democratic ideals, making them economically, politically and socially attractive, insure continuation of American Democracy.

I am not a preacher nor a prophet, but I am going to ask you to dream with me a while. The Bible says: "Lift your eyes unto the hills"; so I say, let us look up away from our own immediate problems. We all believe in the Fatherhood of God and the brotherhood of man. Do we? Well we will easily claim those as brothers who are in our group. It isn't hard to stretch a point and accept the capitalist, the rich man as brother. But how about the labor agitator, the sit down striker, can we have a brotherly sympathy for him? Pretty hard, isn't it? But, if our nation is to survive, we must look beyond our own group and catch a vision of the present-day needs, not merely in terms of economic and political facts, real though these may be, but also in terms of a profound religious motivation of the whole man. Workers must learn to look beyond their objective of shorter hours and higher pay to the problem of how best to produce more goods in a balanced way for all workers and not merely for those who are organized. In like manner, farmers must look beyond their efforts to obtain parity prices to the problem of how best to balance agricultural production and agricultural income with city production, so as to bring about the greatest welfare of all in the long run. Business men must look beyond the problem of obtaining the maximum profits on their invested capital to the job of bringing about a stable increased outflow of goods year after year, on a basis which will best serve the welfare of all.

Is this too idealistic a vision? Thomas Jefferson, Benjamin Franklin

and others had a vision 170 years ago of a country in which all men should be considered equal and endowed with certain rights, such as Life, Liberty and the pursuit of Happiness. They wrought better than they knew. Now, shall we, their heirs, permit this heritage, these rights to disappear, because we cannot see, understand and share our brothers' trouble. Cannot we, in agriculture, set the example? We know what it is to labor with our hands, therefore, we can sympathize with Labor. We also know what it is to risk money in our business. Therefore, we can sympathize with Capital. Is it not possible that if we are broad enough in our views, brotherly enough in our relationship, we, the farmers, may be the ultimate bridge between capital and labor?

May we all—Labor, Capital and Agriculture, lift our eyes to the hills and may the Divine in us catch a vision of brotherhood which will build a greater nation than the world has yet seen.

MR. LEAVERTON: We will now have the Secretary-Treasurer's report, Mr. C. E. Wise, Jr.

SECRETARY'S REPORT FOR YEAR 1938

C. E. WISE, JR., Secretary-Treasurer

The year of 1938 has been one of activity and accomplishment for the Maryland Farm Bureau. Much of our success is due to the cooperation of all. It has been a pleasure to be associated with President Nuttle and a source of satisfaction to work with Martin Sutton and Wilbert Smith in carrying out the wishes of our directors and members. An efficiently run office is the basis of any smoothly operating organization and Miss Dressel has been invaluable.

Every county has cooperated, new projects have been studied and many of them begun. Counties and individuals which led the way will be recognized at the banquet. Many others who helped deserve our sincere commendation.

Membership is the most important activity. Through it, the organization is maintained, and through it a program is developed. In spite of the depression and some strenuous political campaigns, membership totaled 4,287 giving the state an increase of 179 members or 4.4%.

Harford County, in one of the best campaigns ever conducted, increased its membership by 171 to a total of 421 and now ranks second in the state. Anne Arundel County in going from 75 to 142 jumped its membership 90%. Allegany and Garrett Counties were organized this year and we welcome them today. Every county in the state has a unit, so for the first time, Maryland is 100% Farm Bureau.

Our cash income for the year exceeded expenditures by $662.63 while the total assets of the Corporation were increased $720.62. A complete financial statement will be presented at the business session tomorrow morning.

Service to farmers in insurance, livestock marketing and cooperative purchasing is closely allied with membership. Because of the importance

of these enterprises, their managers will report to you later on their respective branches.

Local cooperative units have been assisted by Mr. Sutton and the Association of County Co-ops has already proven very beneficial to them. Wool pooled this year will net the growers 24½c per pound as compared to local prices of 20 and 21c per pound.

A commodity purchasing service unequaled in any state was started when the final agreement with the Southern States was signed. Our plan is based on mutual support by the Southern States and Farm Bureau of each other's program in the individual counties. A stimulation of locally owned, locally controlled cooperatives is already apparent. Prince George's County is organizing a cooperative store; Washington County plans a local co-op., while Frederick and Carroll groups are busy preparing for petroleum distribution in the spring. Each county has a cooperative business committee to study the local needs and possibilities in regard to commodity purchasing. They are prepared to assist present cooperatives and to start new ones when and where they are justified.

Maryland has three able men on Southern States Board in H. H. Nuttle, Edwin Warfield, Jr., and D. G. Harry who can guide this wholesale co-op. along the lines most conducive to service for local groups. If we take advantage of the opportunities offered, and make the strength of these two organizations effective, they are bound to succeed.

An important forward step was taken by the Home and Community Chairman at a meeting in October. By-laws were adopted and the name was changed to the Associated Women of the Maryland Farm Bureau. For the first time something definite has been done to give our women a chance to take an active part in the organization. They should be encouraged, for when given the opportunity, women can and will help build a stronger Farm Bureau.

More worthwhile meetings were held during this year than for sometime past. These began with the district conferences on discussion groups in February, followed by our June week insurance meetings and many special crop conferences. Planning Group meetings have been held each month since March. President O'Neal addressed 2,500 farmers at two meetings in September and your officers have attended three conferences of the northeast presidents and secretaries. Forty-one representatives from Maryland registered at the National Convention in New Orleans. At this meeting, President Nuttle was re-elected Director on the American Farm Bureau Federation Board and Mrs. Weagley was again made Secretary of the Associated Women of the American Farm Bureau.

All of the foregoing items have been published in more detail in the "News Letter" which goes to 6,000 families each month. I have tried to inform all members on Farm Bureau through this medium. Sometimes events you know about are not mentioned because we have not been advised of them. I ask you all to help make this publication more

complete by sending us notices of county activities or seeing that your county secretary does it.

Discussion Groups or Planning Groups have proven our best project for the year and they promise more in the future. After the February meetings, 65 Planning Groups were formed and nearly all have continued. Since March, 55 groups of 12 families have met monthly to discuss questions on all phases of farm life. By this method the members acquire knowledge of their problems and through this information gain the understanding necessary for the confidence which leads to achievement.

In the Planning Groups nearly one thousand of our members have learned more about their organization, their own problems, the principles of cooperation and have secured the facts on new developments like hospitalization insurance and cold storage locker systems. But most of all, they have learned to know their neighbors better and have started a move that promises to bring a more enjoyable community life.

These groups are only the start and are considered as demonstrations for others to follow. I hope that there will be 120 active Planning Groups to report in 1940. Our future program should be developed by these groups and I suggest that the counties appoint all group leaders to their program committees as soon as possible. Members of these groups should be on other county committees to give them the benefit of information secured. I also suggest that county Boards hold joint meetings with these committees at least once a year. In all this, the county agent can and will assist if he is given an opportunity.

There is much to be done in 1939 and in past years we have lost time by failing to plan ahead. The effectiveness of our organization has been impaired by lack of correlation with various programs. As a basis for a state plan for 1939, I recommend that the state program committee be enlarged and made up of one member and one county agent from each state district, the county agent leader, the state Farm Bureau officers and the President and Secretary of the Associated Women of the Maryland Farm Bureau. The chief function of this committee would be to correlate Farm Bureau and Extension activities in the state and counties to promote greater service to our farmers.

Tomorrow the present program committee will present a report to the delegates that includes these suggestions and also a tenative schedule of state and district meetings.

The purpose of this recommendation is to secure more efficiency and is in no sense critical of anyone. Dr. Symons and his entire force have always responded to our every request and have played a great part in building Farm Bureau to its present strength. A program founded on the above basis will give each one a full understanding of the other's objectives and plans. I feel confident that such teamwork will double the size of our organization in the next two years.

But that is only one motive; the other is to fill a definite need. Since the inauguration of the government programs, an increasing burden of work has been placed on the county agents' shoulders. Today there are

nearly 1,000 farmers per county in soil conservation. The detailed work involved is a full-time job in itself, and leaves too little for educational activities formerly conducted by the agents. Our farmers need this service now more than ever to help them adapt their operations to new conditions and improved practices. Here is where a Farm Bureau can help and my suggestion is to create a group who can work out a plan to fill this need through efficient use of our organization. To this end, I make the proposal and offer our full cooperation. If these two great organizations can work together in 1939, we will have achieved something worthwhile and assist our entire program through increased membership.

My second recommendation is that we concentrate our efforts on the major problems through permanent committees or departments. The success of the tax committee has come through years of study and work on this question. It has accomplished far more than any other committee and credit must be given to the persistent efforts and a definite plan. Similar committees are needed on legislation, cooperative business, canning and truck crops, the Baltimore truck market development and other projects. A start has been made on all of these, but more emphasis is required. Only through concentration on specific problems will the desired results be secured.

My final recommendation is that the units of this organization work for harmony between all farm groups and then with other groups. In this way, a united farm front will be built and a better understanding created with business and labor on their problems.

I have confined my suggestions to organization, development and cooperation with all forces in our economic and social system. If we obtain these general objectives much progress will result in the specific projects undertaken.

Of the many problems to work on, we must lay stress on the state tax program to protect real estate, a broad marketing plan to better facilities at Baltimore and insure fair returns to the producers through grading or packaging laws and appropriations for agriculture. These to include funds to carry on extension work to combat the Japanese beetle and to increase the Bang's eradication program. It is imperative that something be done to insure the payments to growers of canning crops. This may be a bonding law for canners, an increase in present cooperatives or a combination.

Our farm program has become established as a principle in the national policy for agriculture as the tariff has for industry. It contains the mechanism to do any of the practical suggestions recently advanced. Under it, the basic and surplus plan developed by Maryland dairymen could be followed. Soil conservation is provided for, prices are stabilized, crop loans and crop insurance are available, and provision is made to develop new uses for agricultural products in industry. In passing judgment we must consider that the 1938 law has never been tested as this year is the first full year of operation. There are many places where the details could be simplified. I understand that this is being

done and that more latitude is given the states in important phases of the 1939 plan. The act deserves a fair trial and then modification to perfect and secure the desired results. These modifications should be made by farmers through their organizations and not by opponents of the bill or other interests. So, let us protect the gains made and perfect them by building on the 1938 act.

The spirit of 1939 seems to be much more unselfish (in this country) than it has been in the past several years. Hard knocks and reverses have tended to temper leaders in labor, industry, agriculture and government. There is a greater willingness to listen to the other fellow's story which probably springs from recently acquired knowledge that no group can benefit alone, but all must want or prosper together. A realization that the country's goal should be more production better distributed is also apparent in the news and the talk. On the other hand, people are becoming convinced that government cannot solve the economic ills of today through legislation alone. Legislation can permit and protect, but the citizens must then do the job through individual action and self help.

To me, this is most encouraging as this attitude will instill confidence and stimulate initiative to solve our biggest problem—distribution.

The founders of this country and their descendants have developed production methods so that we can produce enough to supply the needs of all. Our job is to learn how to distribute this possible abundance. Exchange of goods is now in the process of evolution and cooperative business is considered the best method yet tried. Farmers, in developing cooperatives, are pioneering in building a demonstration for the economic system of tomorrow.

In the cooperative system, there are two functions: operation and education. Usually each is carried out by separate organizations working together. The Farm Bureau is the educational branch of cooperation in Maryland. It has sponsored and developed cooperation more than any other group and will continue to lead. In 1939 we should redouble our efforts along this line by securing a better understanding through Discussion Groups, harmonizing our activities by planning ahead and concentrating our efforts through active committees. In our work, we must cooperate with all groups and constantly strive to do our share in bringing about the adoption and consummation of the principle "a greater abundance better distributed."

MR. LEAVERTON: Thank you, Mr. Wise, we will now have the report on Insurance activities. Mr. Zach Turner is State Agent of the Farm Bureau Cooperative Insurance Companies.

Mr. Turner presented the following report:

REPORT ON FARM BUREAU INSURANCE

ZACH TURNER, State Agent

Mr. Chairman, Farm Bureau Members, Agents and Friends:

It is always a pleasure to bring to the Annual Meeting of the Maryland Farm Bureau the cooperative insurance development.

There has never been a year since the organization of our insurance companies when your company did not surpass the record of the preceding year. That is an accomplishment of which we as cooperatives can all be justly proud. The progress and growth of insurance companies cannot be attributed to any one individual, but is due to the close working relationship between your state and county organizations, other cooperative groups, and the following:

The Agent Force cannot be questioned because past accomplishments speak for themselves. They, in turn, have rendered efficient service to their policy-holders, and that has built up company goodwill through the Tri-State Districts—including Maryland, Delaware, and the District of Columbia.

Policy holders have helped by working with the agency force because they are a part of the company.

Fair, honest, just and sympathetic claim service has been a factor, I feel, that cannot be excelled. This makes satisfied claimants and they are our future prospects.

Another factor is quality product—or standard policies.

The savings we have been able to make for policy holders has amounted to thousands of dollars in this Tri-State District and, regardless of whether you are or are not a policy holder, you are securing your insurance for less because of cooperative insurance development.

Let's stop for a few minutes and analyze various policies which your company offers. Bear in mind that all types of insurance are valuable and have their place. Let's take first fire property insurance, which is written only in Ohio—is written to replace property values. One building out of every 360 buildings insured results in a fire. Second: Automobile insurance is divided into three headings. Fire and theft are bought to pay property values and can be replaced by one's future earnings, if no insurance is carried. Collision insurance is bought for the same purpose. Liability and property damage are bought for protection. The policy states that the company will protect and defend the assured against any legal liability which might arise out of any automobile accident, so, this policy is bought for protection.

Our third service is life insurance. It has two very valuable features and something that cannot be secured from any other investment. They are savings features and a protection element. For example, purchase a piece of property worth $5,000, age 35, and ten years from now, ten chances to two, it will be worth $4,500. This amount placed in a life policy will enable you to have $6,300 protection and in ten years it will be worth $6,300 plus dividends.

There are various types of contracts to meet various needs; all depend upon the circumstances surrounding an individual as to the contract to recommend. Our agents are familiar with life problems and will be glad to discuss life needs with you.

Now, these various policies are built to do certain things, because there are people who only want a saving policy. Of course, such a

person would take a different policy than the man with a family who has greater need for protection. All of these policies have the saving and protection feature.

Life insurance has always been worth 100 cents on the dollar. Has that been true with other forms of investments? It is the most flexible form of investment one can own.

The policy holder has the following options on a policy: Lump sum settlement, monthly income for life, or annual settlement.

This is what life insurance will do for an individual: 1. Pay all outstanding bills; 2. Funeral and hospital bills; 3. Give food, clothes and shelter to the children and widows; 4. Pay off mortgages; 5. Educate the children; 6. Give an income at a retirement age; 7. There are others.

Can anyone take care of these things with any other investment and with the same degree of safety and with the same number of dollars invested?

As to our company's financial statement, I expect that all of you are policy holders and have seen it. If you have not, there are some copies at the insurance headquarters on the ball room floor. I will refrain from figures as much as possible. Our services are established insurance services of today.

Our auto company is one of the casualty leaders in that field today. It produced in the Tri-State District over 9,000 coverages. The company figures for 1938 are more than 52,278 coverages. The total policies in force are 250,600. Our life company has $19,000,000 of insurance in force. During 1938 it produced approximately $9,000,000 of business, which we consider a very fine volume. The Tri-State District produced approximately ¾ million dollars. These are the only figures I am going to give you, as the only thing I wanted to get across to you good people is some idea of the number of people who are buying cooperative insurance services.

I will not attempt to predict what will happen in 1939, but we do know our company has never taken a step backwards and we have always gone forward and will continue. I already have assurance for this year by the agents' loyalty thus far. According to all reports I have received from my fellow workers, 1939 will be the most successful year that we have ever had.

In closing, I want to thank Mr. Wise for the opportunity this morning to bring these services to you. Let's work closer together in 1939 and success will be certain. Remember that in Farm Bureau your insurance premiums do more than afford protection. They help to develop a financial structure, to further cooperative developments, a means by which other services can be rendered to you.

Take advantage of your opportunity to secure positive insurance protection and at the same time help build an economic structure which is continually placing more power in the hands of its consumer. Now is the time to discuss your insurance needs with the Farm Bureau

Cooperative Agent. He can show you how easy and inexpensive it is to completely protect your family's future with a policy in your own Cooperative Insurance Company.

MR. LEAVERTON: Thank you, Mr. Turner, that was a very good report. We will now have the report on Cooperative Purchasing by Mr. W. G. Wysor, General Manager of the Southern States Cooperative.

COOPERATIVE PURCHASING IN MARYLAND

By W. G. WYSOR

General Manager, Southern States Cooperative.

Mr. Chairman, Ladies and Gentlemen:

A Georgia cracker went down to one of the life-saving stations along the Coast and applied for a job as a life saver. He was a very tall, handsome fellow, and they were a little short-handed, so they were interested in him. This chap was about six feet, six inches tall, a good strong-looking boy, and they started to ask him some questions about his fitness for the job, his age, etc., and finally the man making the examination said "You can swim of course?" The boy said, "Wal', no, I can't swim none," but looking down at his long legs, he said, "But I kin wade like Hell." Now I am not quite sure that I can swim nor am I sure that I can wade, but at least my talk will have the advantage of brevity. There are some facts that I want to give on Cooperative Purchasing in Maryland and I am going to try to give them very briefly.

I would like to state some well established facts with reference to cooperative purchasing of farm supplies and at the same time measure against these facts our situation here in Maryland.

FIRST FACT: For farmers to effectively control in their own interest the quality and the cost of feeds, seeds, and fertilizers they must do their own manufacturing or processing in their own plants under their own control.

Now let us compare our policy and program here in Maryland with the fact stated.

We have the largest feed mill on the Atlantic Seaboard. We have the largest fertilizer factory in the world owned and operated by a farmers' organization. We have a large and modernly equipped seed plant. All of these plants are here in Maryland. They have a daily capacity of about 100 carloads. They are located on water where they can use water, rail or truck transportation, whichever may be cheapest. *They are all owned and controlled by farmers.*

SECOND FACT: To operate efficiently and successfully wholesale cooperatives must be regional in character—not state or local—this is another way of saying they must have volume.

Farmers in Maryland have recognized this fact and have set up and are using a regional cooperative along with farmers in Delaware, Virginia, West Virginia and North Carolina.

THIRD FACT: To gain advantages through a cooperative system of buying we must not scatter our purchasing but must concentrate it.

Maryland farmers are concentrating all of their wholesale cooperative buying through Southern States Cooperative—a non-profit cooperative owned and controlled by 78,000 farmer members in Maryland and the four other Middle Atlantic states already mentioned.

FOURTH FACT: Purchasing cooperatives must so operate that the "squeeze play" cannot be used against them.

To avoid the "squeeze play" a purchasing cooperative must perform all the functions necessary to make the supplies available to farmers. These functions include manufacturing, transportation, warehousing, wholesale distribution, retailing and financing.

Otherwise, its competitors will lower the margin taken for the single function performed by the cooperative and make up the difference on other functions.

The result is that the cooperative goes broke. I call this the "squeeze play." The Agricultural Corporation was a single function cooperative and the "squeeze play" was an important factor in rendering it impotent.

Summary

Now summarizing, Maryland farmers in wholesale cooperative purchasing have conformed to all of the fundamental policies necessary to make cooperative buying a really effective and useful servant of agriculture:

(1) We own and operate our own manufacturing and processing plants.

(2) We have joined hands with farmers in nearby states to form a regional organization and with 78,000 legal members and over 100,000 patrons are putting enough volume through our cooperative machine to keep the costs low.

(3) We are concentrating our buying through one cooperative institution—and not scattering it.

(4) We avoid the "squeeze play" by pushing our activities into all the fields of service involved in the farm supply business.

By adherence to these fundamental principles and by conforming to sound policies in other particulars you are making steady and rapid progress in cooperative buying.

Maryland farmers are now buying cooperatively through Southern States 35,000 tons of feeds annually, 40,000 tons of fertilizer and about 25,000 tons of other supplies—a total of approximately 100,000 tons per year.

Three years ago your cooperative purchases were less than one-third of this amount. *During the last three years Maryland farmers have made more progress in cooperative buying than have farmers in any other state in the nation.*

Cooperatives can be too small for effective service. I am equally convinced they can be too large for maximum efficiency.

I think cooperatives should perform a pace-setting function. I think any farmer is justified in being distrustful of any cooperative that maneuvers itself into a monopolistic position. The objective should be to put through the cooperative just enough business to operate at maximum efficiency and thus set the pace for all others engaged in rendering that same service.

With this philosophy in mind, it seems to me that the cooperative which has a waiting list of patrons is in the soundest position. I look forward to the time when Southern States can say "our plants are at capacity; we have the volume of business which enables this organization to operate at maximum efficiency; we therefore will build no additional plants or further expand service to new territory or new patrons in the same territory; the organization will serve the farmers who have built and financed it, but no new patrons can be served at this time." I feel perfectly sure that some day—perhaps in a very few years—Southern States will adopt just this policy. It may be a hard boiled policy, but if it is followed, the purchasing cooperative becomes what it should be to agriculture—a means to an end. That end, of course, is a freer life and a better standard of living for farmers.

MR. LEAVERTON: Thank you, Mr. Wysor, I am sure we Maryland farmers appreciate the service that the Southern States Cooperative is doing.

Next on the program is the report on Livestock Marketing by Mr. F. L. Miles, Manager of the Eastern Livestock Marketing Association.

MR. MILES: Mr. Chairman, Ladies and Gentlemen: I wrote down my remarks, so as to hurry through, so I am going to read them.

COOPERATIVE LIVESTOCK MARKETING

F. L. MILES

Manager Eastern Livestock Marketing Association

This is the second year that I have had the opportunity to be present at the Annual Maryland Farm Bureau Convention and to be given an opportunity to talk on the progress that the Eastern Livestock Cooperative Marketing Association has made during the past year. At this time, I wish to congratulate you on the splendid progress that your Farm Bureau has made during 1938; your increase in members, and the counties that have been organized demonstrate that your work is sound and effective.

The Eastern, and Maryland Agriculture, lost during 1938 a real friend and worker in the death of Charles T. Cockey. Mr. Cockey was one of our valuable directors, and we feel Mr. Cockey's loss at all of our meetings.

During 1938, the Eastern has had some increase in volume. While I do not want to burden you with a lot of figures, I would like to call to your attention a few. As you know, we have sales agencies at Baltimore, Jersey City and Lancaster, and during 1938 we received livestock from

25 states, selling 29,872 cattle, 4,574 calves, 53,490 hogs and 101,401 sheep and lambs. This is an increase over 1937 of 3,641 cattle, 1,688 calves, 4,509 hogs and a decrease of 7,385 sheep and lambs. In percentage, this is an increase of 14% in cattle, 58% in calves, 9% in hogs and a 7% loss in lambs. Our gross sales this year were approximately $4,000,000.00.

Maryland has contributed very largely to our volume and has made a very nice increase over their volume in 1937. This year we have had 2,763 cattle, 1,558 calves, 10,510 hogs, and 1,875 sheep and lambs. This is an increase of 25% in cattle, 63% in calves, 42% in hogs and 3% in lambs. During the year we have been able to secure several loads of feeder cattle for Maryland feeders. Our gross sales of Maryland livestock amounted to $339,581.89.

I would like to cite the counties that have shown some of the largest increases as to number of head of livestock. Anne Arundel, cattle and hogs; Frederick, calves and hogs; Baltimore, all species; Carroll, cattle, hogs and sheep; Harford, Howard and Montgomery, cattle, calves and hogs; Prince George's, cattle and calves; Queen Anne's, calves and lambs; St. Mary's, hogs and lambs; Washington, cattle and lambs.

During 1938 the Eastern has made some changes in personnel; all of these changes have been made with the one idea—to render better service and to better promote cooperative livestock marketing. An experienced cattle salesman has been employed and his work has been highly satisfactory. Recently, we changed our hog salesman at Baltimore and we now have a man that we can feel proud of when he goes to the country, and we know that when you come to the yards he works for you. From time to time other changes may be made, but they are only made after the Board of Directors consider them from every angle possible.

During the past year we have tried to cooperate with the county Farm Bureaus and Extension Division in every way possible, and have attended community and county meetings, advised hundreds of Maryland farmers on marketing problems of various kinds. This year at the Baltimore Livestock Show we handled the bulk of the 4-H Club calves, lambs and hogs from Maryland. At the present time, we have our salesmen and fieldman in the various counties visiting Maryland farmers almost every day in the week.

The Eastern is glad to have the splendid support of the Maryland Farm Bureau. Your field men, Martin Sutton and Wilbert Smith, have encouraged cooperative marketing all during the year and their splendid work has helped in securing increased volume from Maryland. Also, so have the valuable directors on the Eastern Board from Maryland, Sy Jones and Jake Ankeney.

I wish to call to your attention the annual Membership Meeting of the Eastern, which will be held here in Baltimore on Tuesday, February 14th. It is the hope of the Eastern's Board of Directors that we will have a large group of Maryland members attend this meeting.

Let me again thank you for this opportunity to talk to you at your Annual Meeting. May I extend to you the Eastern's full cooperation in 1939, and may I ask you for your support. Any time that we can meet with any of your community or county meetings we will be more than glad to do so.

MR. LEAVERTON: Thank you, Mr. Miles. Now we will hear from our Home and Community Chairman, Mrs. R. S. F. Weagley.

Mrs. Weagley presented the following report:

HOME AND COMMUNITY REPORT

MRS. ROY C. F. WEAGLEY, Chairman.

Home and Community Committee, Maryland Farm Bureau, Inc.

I am in a position similar to that of President Nuttle, as this will probably be my last annual report, because I, too, have not been a candidate for reelection.

Thinking we would like a better community will not in itself improve the one in which we live. Thinking we would like to have a strong Farm Bureau organization will not without effort on our part make it such. Thinking we would like a successful cooperative will not develop one if we stop with mere thinking. The arrows of good intention must have the bow of strong purpose to impel them.

For years it has been the intention of the farmers of Maryland to unite all the counties of the State in farm organization. Now, on this occasion, the 23rd annual meeting, we can proudly say, as you already know, that all 23 counties in Maryland are united in Farm Bureau. And we are indeed, glad to welcome all new members into our midst.

Our Secretary, Mrs. R. G. Spoerlein, has contributed to the stimulation of interest and enthusiasm among the women of the newly organized counties and has addressed them and other counties at the time of their county-wide annual meetings. In her recent radio talk, Mrs. Spoerlein encouraged farm women to participate in the Farm Bureau Women's Speaking Contest.

Our Vice-Chairman, Mrs. Harry T. Williams, has continued her staunch support to the women's work, and addressed annual meetings in various counties.

The Chairman addressed 5 county annual meetings, made 2 radio talks, and spoke on "Rural Youth" to urban groups; also represented the Maryland Farm Bureau in a conference on World Economic Cooperation, held in Washington, D. C. As a representative of the Associated Women of the American Farm Bureau Federation, your Chairman has served on the Executive Committee of the National Council for Mothers and Babies, and attended the summer conference of the Northeastern Region. Also attended the 20th annual meeting of the American Farm Bureau Federation and its Associated Women, held in New Orleans, the week of December 11th.

Mrs. Edwin D. Fry, Chairman of Montgomery County, represented the Maryland Farm Bureau in the semi-annual meeting of the National Council for Mothers and Babies, held in Washington, D. C.

It is with keen interest that the farm women of Maryland will look to Baltimore County for information relative to the Cooperative Health Program launched there this year.

Your Chairman, Vice-Chairman, and Secretary, with Mrs. H. L. Davis and Mrs. P. D. Brown, constituted a committee for the framing of By-Laws of Association, as was requested last January by the Farm Bureau women of Maryland, who, on October 25th, adopted the By-Laws and had same presented to the Board of Directors of the Maryland Farm Bureau for ratification.

What has been known as the Home and Community Department will now be called the Associated Women of the Maryland Farm Bureau, Inc. each county will be entitled to the representation, in the women's meetings, of one delegate for every 100 Farm Bureau families, or major fraction thereof. It is hoped that the counties will so alter their programs as to utilize the talents of the farm women, or to the dismay of all, it will be discovered that many of the most intelligent and capable women are turning to other agencies for expression and service. The strength of the Farm Bureau rests upon its unity—a unity within which men and women of differing talents may work together in mutual respect.

Three farm women participated in the Maryland Speaking Contest on "Better Schools for Rural America." Mrs. Reginald S. Ankeney of Washington County was adjudged the winner. She was accompanied by the Chairman to the New York Farm Bureau annual meeting, in Buffalo, where the Regional Contest was held, in connection with the New York Federation of Home Bureaus. The purpose of the contest has been not only to develop speakers but to promote study and research on issues of state and national importance and to direct the thinking of rural women toward one great common problem.

"The Farmer's Stake in World Peace" is the topic for this year's contest. Our program in working for World Peace is primarily a program of training for world citizenship, which implies, first of all, the increasing realization that all the peoples of the earth are dependent upon one another.

Recognizing the fact that success in Farm Bureau depends upon the leadership of men and women out on the farm, a new emphasis has been placed on adult education, in the formation of discussion groups, which stimulate interest in cooperation and create a better social atmosphere among neighbors in a community. The County Chairmen and others have been very helpful in the advancement of this project.

In spite of our achievements, we dare not be content to rest upon the laurels won the past year, or any year, but must meet the challenge of the year ahead to be of greater service to the rural people of Maryland. "As necessity is the mother of invention, strong desire is the mother of attainment".

So, let us resolve:

To keep the faith, to do our work and live.
Impel ourselves to grow and gain and give.
Never to look behind us for an hour,
But wait in weakness, and walk in power.
While ever pressing forth toward the right,
Continue looking upward to the Light.

At this time there were some songs, and announcements.

MR. LEAVERTON: We will now have an address by Dr. T. B. Symons, Acting Dean of the College of Agriculture of the University of Maryland, on "Maryland Looks Ahead."

MARYLAND LOOKS AHEAD

By DR. T. B. SYMONS, Acting Dean and Director,
University of Maryland, College Park, Md.

Mr. Chairman and Members of the State Farm Bureau:

I am pleased to have this opportunity to express the appreciation of our Service and the University as a whole for the cordial cooperation and support that the Farm Bureau gives to all our force. The fine results obtained in organization and Extension education and service to our people is a splendid demonstration of cooperation between these agencies. Farm organization and Extension education must go down the line together; any deviation, division, or travel along different roads spells ineffectiveness and failure. The spirit of cooperation and sympathy between the Farm Bureau, the State Grange, and affiliated associations is our greatest asset. May it always continue so.

You asked me to discuss the topic "Maryland Looks Ahead." I firmly believe that we can look ahead with confidence and optimism and that we can tackle with enthusiasm the job of cooperatively bringing about a better and more prosperous rural Maryland. I am convinced, and I know that all of you believe, that the farm people of Maryland have always looked ahead. Only by intelligent adjustment to the changing conditions, as they have been able to observe and sense their approach, could the people of this State have achieved the degree of prosperity they have experienced. Probably in no other state has agriculture been confronted with as many and as great changes in conditions as in Maryland. It is a question whether any other group of farm people have found it necessary to modify and adjust their farming operations and their production to as great degree.

I will not review these changes; by thinking back, most of us recall many of them, right in our home communities. The point I would emphasize is that these changes did not take place by their own impetus. They were brought about by the people who operate Maryland agriculture, and they made the changes in their production, their methods, their policies because of what they saw, or thought they saw ahead.

We are living in a period when just as great changes affecting agriculture are taking place, and many believe that even more far-reaching changes are affecting the industry today than ever before. Certainly, many of the factors with which we have to deal are of a different character than those confronting our farm people of a generation ago, or less, and different approaches and different methods are required.

In trying to see and interpret some of the things ahead we are dependent entirely upon our experiences and observations in the past. Sir Josiah Stamp, the noted English economist, says, "Only the experience accumulated and expounded by the economist and only the struggling to apply its lesson to the new conditions, free from wishful thinking, can keep the world from making all the old mistakes."

So—in the light of our past experiences—we may ask ourselves in looking to the future just what we would like to see ahead for Maryland agriculture. It is almost trite, and it is not specific, I know, to say that we want to see for farm people greater opportunities of all kind, greater comfort, greater security,—in short, just as high a standard of living as can be achieved by people of any calling, anywhere. We can see very clearly that goal toward which we strive. Our problems lie in devising the means which will in greatest measure accomplish our ultimate aim. While we recognize that the people on the farms and in the homes, the boys and the girls—in other words, the human element, is the all-important factor in the situation, we are forced to recognize also that the welfare of these people is dependent upon the material factors—the material rewards for their efforts and planning.

It is somewhat difficult to look ahead for Maryland agriculture as a whole, because of its exceptional diversity. Certain of those engaged in the industry are interested primarily, and almost exclusively, in the outlook for the dairy business, others for profitable production of commercial vegetables, fruits, livestock, poultry, canning crops, etc. Undoubtedly, the conditions ahead are not exactly alike for all of these diverse types of agricultural production. We may, however, consider whether there are some broad factors in the situation which have an important bearing on all, or nearly all, of our great agricultural industry. I believe that there are such broad factors, and in the brief time at my disposal, it will be my aim to call attention to a few of them.

In the first place, I repeat what I have urged on many occasions for a number of years. The greatest opportunity for Maryland agriculture lies in the production of products for human consumption. This is a broad statement, but as we plan our programs during the next few years, I believe we may well keep it in mind as a sort of guiding principle. More than one-third of the people living in cities and towns in the entire United States are located in the Northeastern States, within easy transportaion distance of Maryland farms. The need for food products grown on our farms is virtually at our door. As we look ahead, we may well observe and give heed to any trends or conditions that will help us to more fully take advantage of our opportunity. In our planning, we may aim definitely to capitalize on Maryland's preferred posi-

tion and resources for agricultural production, and for gaining and maintaining as large share as we need of the market at our door.

We cannot be unmindful that in these modern days Maryland must take its part in national agricultural programs, and that we cannot consider conditions as they apply to our State, separately and apart from the rest of the country, and, indeed of the world. We are cooperating in carrying out a number of national agricultural programs, and, as we look ahead, we must count on continued cooperation in such programs. An intensive effort is now being made to better coordinate the several activities carried on under the AAA, the Soil Conservation Service, Crop Insurance, Farm Security, Rural Electrification, and other agencies, with a view to developing a well-rounded, comprehensive program for the agriculture of the State, and for different regions within the State. That is one of the big tasks, and one of the most important in which some of the farm people of Maryland are engaged right now, and which is just ahead for most of them.

We have these various activities which are parts of national programs, but these national programs have been modified from time to time during the few years they have been in operation, and they will be further modified in the years which lie just ahead. One of the tasks constantly confronting the farmers of Maryland, and especially the organized farmers, is the constant study and consideration of the modifications needed to best adapt the national programs to the particular conditions existing in this State. For example, some 18,000 farmers in Maryland are cooperating in the AAA program, which has for one of its major aims the conservation of soil fertility. In many ways, it is accomplishing that aim, but in one very important respect there is apparent need for modification to meet conditions. For many, many years, an outstanding feature in Maryland agriculture has been the extremely small percentage of land that was uncovered and exposed during the winter months. I have been informed recently by the authorities in agronomy at the University of Maryland that 40,000 acres more land is exposed this winter than during recent years, and that this is the result of the practices required in carrying out the provisions of the AAA program. Certainly this is a matter that deserves immediate consideration and action by Maryland agriculture, to the end that such modification be brought about as is necessary to meet our conditions and prevent loss due to exposure of our land to the destructive elements.

I will not dwell upon these so-called "action" agricultural programs, which we will amost certainly have in one form or another in the years immediately ahead. After the years of experience the farmers of the nation have had in attempting to solve some of their broad problems by cooperative action under the leadership and direction of the Federal Government, there is every reason to believe that such efforts will continue. Just what modifications will be made by the Congress which has just assembled cannot be forecast with any degree of accuracy. It is a time for farmers and farm organizations to be alert and keep themselves well informed.

Marketing and Distribution

As I look ahead for this State, the outstanding challenge along the front of practically every phase of our agricultural industry is our inability to market and distribute our products efficiently and profitably. We may make one exception—our dairy industry—and, while I would not detract one iota from the wonderful success of the Maryland Milk Producers' Association and the splendid job it has done, even that Association has its problems in the distribution field.

I recognize full well that the problems associated with marketing are many and varied. Undoubtedly, their extreme complexity accounts in large measure for the slow progress that has been made. Nevertheless, regardless of the programs we may have in cooperation with the Federal Government, whether it is found wise to restrict or expand certain types of our production, there is the glaring fact that efficiency in marketing and distributing whatever we produce ranks in importance with efficiency in production, and both are essential if we are to derive more nearly a full profit from our efforts.

In dealing effectively with the marketing and distribution problems, it would be necessary, of course, to get down to cases, analyze the situation surrounding specific commodities, face the facts squarely, and then, seriously and determinedly, attempt to find the best solutions. Some things can be attempted immediately; others will require more time and more thorough study than has yet been made.

Better Market Facilities

Among the problems that may be approached at once is the improvement of marketing facilities in some of our larger cities to which large volumes of Maryland farm products are shipped. With all the progress in modern life, with the impact of the so-called Mechanical age—with revolutions in transportation, little or no change has been made in the farmers' market facilities in many of our large cities. This applies to Baltimore, Philadelphia and New York. With the many public improvements that are being made, is it not possible to make some progress in this one project in Baltimore, our State's metropolis? If approached in a comprehensive and business-like manner, it can be accomplished on a self-liquidating basis. This was certainly true in Washington, when conditions there forced a change and relocation of marketing facilities. Studies of the situation in Baltimore made by our research men show that the present system and facilities are costing at least $500,000 a year unnecessarily to market the produce that is sold in that city. That is a tax on the producer, dealer, and consumer.

A look ahead, it seems to me, would eliminate the present congested situation of the farmers' market and commission merchant area, improve the approach to the city from the water front, and greatly reduce traffic problems to the South and Annapolis way.

A similar problem exists in Philadelphia, which largely affects our people on the Eastern Shore. Truly, our marketing facilities are relics of the "hoss and buggy days."

Others of our marketing and distribution problems require careful study. They involve the application, in some way, of at least some of the modern merchandising methods to the sale of farm commodities. They require that we give greater attention to what the consumer wants and will pay for, when he wants it, the form in which it most appeals, and how we can best supply those wants.

The thinking in that line is indicated by a statement issued recently by the Executive Committee of the National Vegetable and Potato Committee, which said:

"Application of the sciences to production, both agricultural and industrial, has concentrated tremendous quantities of the different commodities used by the people in the hands of specialized groups and requires a system of distribution and marketing equally efficient with production. - - - - Distribution, to be effective, must associate the sciences with economics. Our failure to recognize this important activity has produced barriers of distribution and marketing, so that the products of one group cannot be effectively exchanged with the products of other groups. The services of distribution as now operating are inelastic, wasteful, and frequently inefficient. They are unable to correlate production and distribution with human needs and desires—the cost of services in marketing vegetables and fruits, valued at one billion dollars, is estimated to be 1½ billion. This creates so-called surpluses, seriously reduces the growers' returns, and maintains too high consumer prices. - - - We believe that our distribution system, with the use of the sciences as well as economics can be developed so as to better balance production with distribution, and furnish a better diet to the Nation as well as a more prosperous agricultural industry."

I have given considerable attention recently to the results achieved in merchandising Maine and Idaho potatoes, and the possible application of similar methods to some of our Maryland products. We are hopeful that at least partial solutions will be found to the problem of marketing these crops, which have given producers considerable difficulty.

Grading and Standardization

One phase of modern marketing in which we are woefully lacking is in grading and standardization of our products. For ten or more years, we have tried to secure permissive legislation granting authority to the State Board of Agriculture to establish grades and standards for farm produce upon petition of a majority of interested producers. In my opinion, nothing will help our marketing situation more than providing a means whereby the consumer can be assured of the grade and quality of the products she purchases. With practically every other type of food product offered in attractive packages, of definite, uniform quality, some way must be found to give to products of our farms the same appeal to the buyer and the same dependability as to quality. How much in that line can be done profitably by the producers, or organizations of producers, will no doubt, vary with the different commodities. This much

can be said, however: it is a job that must be done if marketing is to be efficient, and the producer has a vital interest in finding out the best method for its accomplishment.

New Uses For Farm Products

A look into the future for Maryland agriculture cannot fail to visualize developments in the way of new uses for products and by-products of our farms. In that direction, many believe, lies substantial help in solving some of the problems of troublesome surpluses. Development of new uses for farm products and placing them on a practical, economical basis requires more time to effect than the so-called "action" programs in which we have been engaged during the last few years. The action of the Federal Government in that field is just now taking definite form, although much more work has been done throughout the years than is generally realized. Regional laboratories are now being established for the specific purpose of trying to find new and practical uses for farm products. The one of these laboratories which directly interests the people of Maryland will be located near Philadelphia. It will devote special efforts to attempts to find new uses for tobacco, apples, Irish potatoes, milk products and vegetables.

I have just returned from a trip to Idaho Falls, Idaho, the center of the Irish potato industry in the Snake River Valley. Recently, there has been erected by the State Experiment Station from State funds an alcohol manufacturing plant. The plan is to use surplus cull Irish potatoes. It is understood that about a gallon of alcohol can be made from one hundred pounds of potatoes. In other sections of the country, starch is being manufactured from potatoes with apparent success, both from the standpoint of quality of product and profit for growers and manufacturer. In our look ahead, it is a question whether serious consideration might not be given to the establishment of a starch factory on the Eastern Shore to utilize surplus sweet and Irish potatoes, and any portion of the crop that is not of first grade.

Continuing Programs

As we look ahead, we must contemplate the continuation, without letdown and in some cases with greater emphasis, of many important activities now in progress. The fact that Maryland soils are among the oldest in this country from the standpoint of length of time in cultivation, and at the same time the yields of our principal crops are among the highest, pays a tribute to those who have tilled our lands that cannot be expressed in words. Nevertheless, the problem of conserving our soil resources is always with us and the continued progress of a community or State depends upon its successful solution.

By means of extensive demonstrations and educational efforts conducted by the Soil Conservation Service in cooperation with the Extension Service of the University of Maryland, the seriousness of the problem, together with effective solutions have been brought forcefully to the attention of the farmers of the State. The importance of the

problem is now recognized more generally and thoroughly than ever before. Modern, successful methods for preventing this great loss are being demonstrated. The necessary legislation for dealing with the problem has been enacted. From the standpoint of the individual Maryland farmer, there lies ahead the problem of dealing with the soil erosion problem on his own farm, as an individual and in group action with those in his community.

Practical demonstrations have been conducted in Western and Southern Maryland and on the Eastern Shore, which should encourage and aid farmers in adopting systematic plans for soil protection.

Closely related to the problem of soil conservation, and in some parts of the State a major factor in keeping soils in workable condition, is the matter of drainage. Splendid progress has been made during the last three years through the assistance of enrollees in three CCC drainage camps, in cooperation with specialists of the Extension Service, County Commissioners and farmers in several counties on the Eastern Shore. Provision for continuation of this work is a need for the future.

And so, I might enumerate many of the activities which must be continued, if the agriculture of the State is to progress as we all hope it will progress; you are familiar with most of them and are participating in them. A look ahead calls for maintaining your interest and effort and for your leadership in securing the more general adoption of practices that are for the best interests of the individual farmer and the general welfare.

Land Use and Program Planning

As I mentioned, earlier, a special effort is now being made to develop a comprehensive program for Maryland agriculture, adapted to the respective regions of the State, and based upon the best use of our land resources. In such a program, it is the aim to coordinate the work of all the Federal agencies that are carrying on activities pertaining to land use. A State Committee has been formed and we are now planning regional meetings of our Extension force, farmer committees and representatives of all Federal agencies, so that programs may be developed that are adapted to the needs of particular communities and counties, as well as for a given region of the State. The success of this effort to build programs "from the ground up" depends upon the extent to which farm people, men and women and older youths, enter into the project and give the benefit of their experience, judgment and foresight. It is a project on which the Federal Government is placing a great deal of emphasis in all the States. It is something in which the Farm Bureau, and all organized agriculture can render distinctive service and aid.

In connection with the effort to bring together all agencies in a coordinated program, I cannot refrain from mentioning with pride the success which has attended the coordination of all State agencies engaged in the promotion of agriculture. If time permitted, I could present many arguments showing the economy and efficiency of such procedure, as

contrasted with the manner in which similar activities and services are being conducted in other States. May I caution our leaders to see that nothing is permitted to disrupt the present coordinated set-up in carrying out our agricultural work. While there will be weaknesses here and there that need strengthening, the principle of coordinating these agencies eliminates duplication, jealousy, and other undesirable factors, and is one of the soundest cornerstones in the future development of our agricultural program.

Conclusion

And so, friends, I may close as I began. We can look ahead with confidence and optimism for the future of Maryland agriculture. We can see ahead a challenge for all of us—the farm people on their farms and in their homes, the leadership in the Farm Bureau and all farm organizations, for those who devote their efforts to discovering new facts and information pertaining to the complex business of growing and marketing farm products, and to the Extension workers. There is much truth in the statement made by Glenn Frank, when he says: "The future of America (and we can say the same for Maryland) rests in the hands of two men—the investigator and the interpreter. We shall never lack for the administrator, the third man needed to complete this trinity of social servants. And, we have an ample supply of investigators, but there is a shortage of readable and responsible interpreters, men who can effectively play mediator between specialist and layman. The practical value of every social invention or material discovery depends upon its being adequately interpreted to the masses. Science owes its effective ministry as much to the interpretive mind as to the creative mind. . . . History affords abundant evidence that civilization has advanced in direct ratio to the efficiency with which the thought of the thinkers has been translated into the language of the workers. . . . A dozen fields of thought are today congested with knowledge that the physical and social sciences have unearthed, and the whole tone and temper of American life can be lifted by putting this knowledge into general circulation."

I would apply this thought to Maryland and to the agriculture of our State, as we think of the period just ahead. It is a challenge to us of the University, and especially the Extension Service, and it is a challenge to you of the Farm Bureau. When we think of the more than 40,000 farms and rural homes in Maryland, evidently the need for interpreters is far beyond the number of extension workers. Probably the greatest field for service, and the greatest contribution your organization can make to the progress of agriculture in Maryland is in the development of informed leaders among its membership. We shall all progress, and our industry will progress, in proportion and to the degree that we are able to arouse the mass of farmers to adopt improved practices, as developed by science, and to join with their fellow farmers and with other agencies striving to the common end of a better Maryland agriculture and rural life.

MR. LEAVERTON: Thank you, Dr. Symons, for that splendid address.

Next on the program is the address of Mrs. Reginald Ankeney, winner of the State Speaking Contest, on "Better Schools for Rural America."

"BETTER SCHOOLS FOR RURAL AMERICA"

MRS. REGINALD S. ANKENEY

Clearspring, Maryland.

Gone is the day when the farm boy or girl can assume the responsibilities of life with only the equivalent of a grammar school education.

The problems of youth are enduring but with the advent of the depression, these problems have been greatly increased. The youth of today, and particularly the youth in the rural districts, need all the advantages of educational training they can acquire.

No longer is the rural youth's future confined to the field of agriculture. The decrease in the urban population has opened new fields for employment. The percentage of our population engaged in agriculture has dropped from 53 per cent to 21 per cent. On the other hand, granted the boy desires to make farming his life work, he should not be handicapped by the lack of adequate education. The advanced methods of farming and the increased use of machinery in agriculture make rural education a necessity. Education for rural Americans should be made available to all without restrictions.

Charles Schwab said, "We are all salesmen every day of our lives. We sell our ideas, our energies, our enthusiasm to those with whom we come in contact." Some people think of a salesman as a high-pressure, city-bred man coming out to sell the folks in the country something they neither want nor need. I know of no better example of salesmanship than that displayed by the farmer, but unlike the average salesman, the farmer must be able to sell a far greater variety of products. Then, too, farmers of tomorrow, our children, will be required to combat keener competition in selling than we experience today and should be prepared to meet this competition.

Too often when we speak of the education of our children, really, in our minds, we mean the education of our boys. We must remember that the education of our daughters is of equal importance. Perhaps she will not take her education into the marts of trade nor add anything to the income of the family. However, as a result of her education she will be equipped to live her life more fully. She will be prepared to meet the problems of everyday life and maintain the proper home for her husband and children. Without sufficient education she cannot realize to the fullest extent the value of her own health and happiness which is her rightful heritage.

Statistics show that in the year 1938 the farm families produced a surplus of 50 per cent in the number of children required to maintain a stable population in contrast to the cities whose number was some

8 or 10 per cent short of the required number of children. The resulting condition was that the average farm sections were supporting one-third of their population in the school and the cities were supporting less than one-fourth of their population in the schools. In 1933 and 1934 rural schools spent $53.00 per pupil in average attendance, while the cost per pupil in urban schools was $93.00.

Then, there is the subject of taxation, a large part of which goes to maintain public schools. From The National Industrial Conference Board we find that by 1929 one-eighth of the farmer's gross income went for taxes and prior to 1930 the farmer was paying one-fifth of the tax bill of the nation against his share of the nation's income which is only one-tenth. The farmer is carrying a heavy tax load, it is true, but to skimp on rural school organizations is false economy.

In the section of Washington County in which I live, two rural schools were closed last year creating a deplorable condition which still exists. One school bore the burden of 75 pupils enrolled in one class, housed in one room, and supervised by one teacher. Surely this group of children is not receiving the educational leadership it deserves. The closing of these two schools also brought about very unsatisfactory results in school-bus transportation. Instead of using extra buses or making two trips, the extra pupils were crowded into the same number of buses used before. This condition is neither healthy nor safe. Training the minds of our children is important, but their health and safety is of paramount concern, always.

We as regions, states, and a nation, have made extensive provisions for the conservation of our soil and our forests, which is necessary, but so little has been accomplished in the direction of conserving rural education. There is a vital need for a program to remedy these conditions. We do have the National Education Association, which is supporting the program to improve some of these conditions. However, it is not yet extensive enough to produce the far-reaching results necessary to effect the rural schools of our nation in general.

In my opinion, the following steps would bring at least a partial solution:

First: We must arouse sentiment and stimulate the need for better rural schools. Any effort to improve these conditions must first come from the farm people themselves.

Second: We must raise the standards of employment in rural schools. We must make conditions and salaries more attractive so as to interest teachers of higher qualifications. All too often teachers are sent to rural schools only after they have proved their inability to maintain the standards upheld in city schools. Our rural schools are also used as proving grounds—sometimes with satisfactory and sometimes with disastrous results. Teachers direct from training schools and without experience are sent to us. If they prove their quality, as a reward they are at once transferred to a city school. The very fact that a city school is held forth as a reward for work well done shows the deplorable

depth to which rural schools have sunk. The two above conditions create an atmosphere of change which is very unsettling to pupils and does not give a teacher an opportunity to become acclimated with either the problems of the community in which he is teaching or the individual problems and needs of the child whose mind he is trying to train.

Third: We must secure better cooperation between urban and rural leaders in order that we may attain, not equal, but the same standards of education in all schools.

Fourth: The provision of a more adequate and equal taxation to provide funds for equal educational opportunity for all children.

We have a duty to provide these boys and girls growing up on the farm today with every opportunity in the way of education so they may reach adult life ready to serve our nation and take their places as valued and respected citizens.

After some announcements, the meeting recessed on schedule to meet again at 1:30 P. M.

AFTERNOON SESSION

Lord Baltimore Hotel Ballroom, January 12, 1939

After some songs, President Nuttle opened the meeting.

MR. NUTTLE: Your presiding officer this afternoon is the President of the county which has the largest Farm Bureau in the State. They say it is the best county in Maryland. Some of us from the Eastern part of the State do not always agree with that. Yet, they do have a wonderful county organization there, and it gives me great pleasure to introduce to you at this time Mr. A. M. Etzler, President of the Frederick County Farm Bureau.

MR. ETZLER: Mr. President, ladies and gentlemen: If we fill this auditorium this afternoon, it would only make me feel that I was home at one of our regular meetings of the Frederick County Farm Bureau. I do not want to argue about it, but I want to say this—we had our annual meeting on the 28th day of December, and it was our pleasure to seat 674 people; so you can see that Frederick County is behind the Maryland Farm Bureau.

First on our program this afternoon will be the presentation of the F. F. A. medals by our President, Mr. H. H. Nuttle.

MR. NUTTLE: The Maryland Farm Bureau feels that there is no work more important in Maryland than the teaching of agriculture in our high schools. For years the trend has been that our young boys and girls from rural areas head from the country right to the city where they think they can get more money. For two years some time ago I worked in Wilmington as Secretary for the Y. M. C. A., and time and time again we would have the example of a country boy coming up to the city thinking he was getting more money compared with what he might get in the country. That made out all right as long as he remained single, but when he got married, and he had to pay more rent and more expense, the first thing he knew his nose was at the grindstone, and he had very little left from the salary.

I am delighted with the work the 4-H and Future Farmers of America are doing in training our young people from the farms for the future. They may not get as much money in the start on the farm as compared with what they may get in the city, but they will find in the long run that it will pay them better, especially if they are trained for that work. At this time, I am going to present Dr. Cotterman, who will give us some facts on this work.

Dr. Cotterman gave the following talk, after which the medals were presented:

Ladies and Gentlemen, Members of the Farm Bureau, Guests and Friends: I am very happy to be able to present these boys to you this afternoon. They represent some of the best workers in vocational agriculture in the high schools of the State.

At some future date, Mr. President, I would appreciate an opportunity to tell the Farm Bureau something of how we have the College of Agriculture organized under Dr. Byrd's guidance.

I would like to explain our system of guidance for freshmen, and for upper classmen. We are very proud of the way the system is working, and the way in which our professors are studying the educational job in that part of the University of Maryland.

At the present time we have instruction in vocational agriculture in 56 white high schools, and in 14 colored schools, with an enrollment of 2,228 white boys and 756 colored boys, making a total of 2,984. The Future Farmers of America organization is an integral part of the instruction in vocational agriculture for white boys; the organization for colored boys is the N. F. A.—New Farmers of America.

The boys before you entered the Farm Bureau-F. F. A. Project Contest, and have been successful. This, of course, means that some of the outstanding workers in the State are here in person.

This year we took the best 5 boys from each school and analyzed their project work. We found that:

Projects of Vocational Agriculture Boys

Kind of Project	Per Cent of Total	Pupil Labor Income Per Project	Highest Project	Lowest Project
Dairy	18.2	$147.77	$425.29	$39.12
Swine	18.8	94.43	270.65	28.95
Poultry	17.7	85.92	232.31	27.25
Tomatoes	8.8	85.44	243.39	21.88
Tobacco	7.6	134.58	224.44	56.00
Potatoes	4.7	81.69	171.51	24.59
Corn	9.4	89.68	252.59	13.61
Miscellaneous: (wheat, turkeys, hay, sheep, colt, beef, beans, peas, sweet potatoes)	14.8	112.69	666.38	6.55

The average labor income for the boys was $106.57 per boy, making a grand total for 265 boys in this particular analysis, of $28,241.05.

I think we all are very proud of these boys. They are boys who know how to work and we regret that all of the 35 boys who are to receive medals from the Farm Bureau are not here. We would like you to see all of them because we know that among them we have not only future farmers, but future Farm Bureau members, future members of the church, future members of school boards, future members of other organizations as well as future teachers, county agents and other agricultural workers. Therefore, it gives me great pleasure to present the medals for the first class.

LIST OF WINNERS
in the
MARYLAND FARM BUREAU—F. F. A. PROJECT CONTEST
1937-1938

Project	Rank	Contestant	Teacher	High School	Medal
Miscell. Livestock:	First	Ralph Vernon Baker	O. T. Graser	Oakland	Gold
	Second	Erle P. Talbert	Manville E. Coblentz	Boonsboro	Silver
	Third	Elsworth Durbin Reeder	Manville E. Coblentz	Boonsboro	Bronze
Miscell. Truck:	First	J. Milton Laws	N. P. Joyner	Snow Hill	Gold
	Second	Jack Wheatley	Perry S. Flegel	East New Market	Silver
	Third	Donald Messick	Perry S. Flegel	Hurlock	Bronze
Miscell. Crops:	First	Bert Caudill	Frederick W. Fuller	Jarrettsville	Gold
	Second	Herbert A. Buckmaster, Jr.	Carey E. Lacey	Calvert County	Silver
	Third	Maurice C. King	Donald E. Watkins	Damascus	Bronze
Sweet Corn:	First	James Junghans	Sydney T. Lawler	Sherwood	Gold
	Second	Edgar L. Myers	Harold A. Remsberg	Smithsburg	Silver
Corn:	First	Ray E. Valentine	Robert K. Remsburg	Emmitsburg	Gold
	Second	Paul K. Shockey	Harold A. Remsberg	Smithsburg	Silver
	Third	Joseph Elmer Hoyle	C. Merrick Wilson	Poolesville	Bronze

Project	Rank	Contestant	Teacher	High School	Medal
Potato:	First	Warren Seibel	Sydney T. Lawler	Sherwood	Gold
	Second	Casper Charles Murphy	Arthur M. Ahalt	Frederick	Silver
	Third	Irving Leslie Hannel	Harold A. Remsberg	Smithsburg	Bronze
Tomato:	First	S. James Matthews, III	Francis M. Rogers	Stockton	Gold
	Second	Donald C. Sensenbaugh	Harold A. Remsberg	Smithsburg	Silver
	Third	Louis Kiski	Perry S. Flegel	East New Market	Bronze
Tobacco:	First	Francis Jameson Schultz	T. C. Martin	Hughesville	Gold
	Second	George Farrell	T. C. Martin	Hughesville	Silver
	Third	Gideon Dyson	T. C. Martin	Hughesville	Bronze
Poultry:	First	Edgar Ervin Miles	Sydney T. Lawler	Sherwood	Gold
	Second	Robert I. Burall	J. Homer Remsberg	Middletown	Silver
	Third	Warren Seibel	Sydney T. Lawler	Sherwood	Bronze
Swine:	First	George Davis, Jr.	Harry McDonald	Sparks	Gold
	Second	Clyde Foster	Harry McDonald	Sparks	Silver
	Third	Calvin M. Murray	Chester M. Cissel	Lisbon	Bronze
Dairy:	First	Ray E. Valentine	Robert K. Remsburg	Emmitsburg	Gold
	Second	Everett W. Mullinix	Chester M. Cissel	Lisbon	Silver
	Third	Billy King	James R. Ward	Gaithersburg	Bronze
Diversified Farming:	First	Clifton C. Link, Jr.	Sydney T. Lawler	Sherwood	Gold
	Second	Carroll Zentz	Robert K. Remsburg	Thurmont	Silver
	Third	Wilbur Thomas	Charley Miller	Friendsville	Bronze

MR. ETZLER: The report of the Credentials Committee will now be given by our old friend, Wilbert L. Smith, Chairman.

Mr. Smith gave the following report which was duly accepted.

The Credentials Committee in its certification of voting delegates for 1939 has followed the Constitution and By-Laws by only certifying membership received in the State Office up to and including December 31, 1938.

REPORT OF CREDENTIAL COMMITTEE, MARYLAND FARM BUREAU, INCORPORATED—1939

County	*Paid Up Members*	*Number of Directors*	*Number of Delegates*
Allegany	54	1	1
Anne Arundel	142	1	3
Baltimore	354	1	7
Calvert	124	1	2
Caroline	169	1	3
Carroll	224	1	4
Cecil	63	1	1
Charles	189	1	4
Dorchester	106	1	2
Frederick	598	1	12
Garrett	66	1	1
Harford	421	1	8
Howard	79	1	2
Montgomery	220	1	4
Kent	175	1	3
Prince George	357	1	7
Queen Anne	123	1	2
Somerset	143	1	3
St. Mary's	81	1	2
Talbot	103	1	2
Washington	187	1	4
Wicomico	235	1	5
Worcester	74	1	1

	Number of Directors	*Number of Delegates*
Maryland State Horticultural Society	1	1
Maryland Crop Improvement Association	1	1
Maryland State Beekeepers Association	1	1
Maryland Vegetable Growers Association	1	1
Maryland Tobacco Growers Association	1	3
Maryland State Horsebreeders Association	1	1
Maryland State Poultry Association	1	1
Hillsboro-Queen Anne Cooperative Corp.	1	1
Maryland Milk Producers, Inc.	1	3

Respectfully submitted

WILBERT L. SMITH, *Chairman.*
FRANCIS SHILLINGER
GRENVILLE LEWIS
ROBY MULLINIX
WILLIAM WINTERBERG
JOHN SMITH
JOHN S. BUSHEY.

MR. ETZLER: The first speaker we have this afternoon is General Counsel of the Baltimore & Ohio Railroad, and I am told the most beloved Governor that West Virginia ever had. He will talk to us on "Railroads and Their Relation to Agriculture." At this time I am proud to present to you Mr. John J. Cornwell, former Governor of West Virginia.

RAILROADS AND THEIR RELATION TO AGRICULTURE

HON. JOHN J. CORNWELL

Mr. President, Ladies and Gentlemen:

While it has been 50 years since I quit farming, or very near to that, I have kept fairly closely in touch with agriculture in my own native State. As President of a bank in West Virginia, I sit down at intervals to preside over a Board of Directors that is composed largely of farmers, fruit growers, cattle raisers and some just plain farmers. So, I think I still know something about the problems that confront the farmer, the agriculturist, even though those problems have changed materially since I was a farmer.

But I did not come here this afternoon to discuss your problems except as to railroads and their relation to agriculture, their problem with which we have to deal in the railroad world. I want to thank the officers of this Association for giving me the opportunity of appearing before this group of very substantial citizens and farmers of the State of Maryland.

Now, it was suggested that I speak to you about the railroad situation and its relation to agriculture, and I assume that the very fact that that subject was assigned to me indicates to me that you are—or at least the officers of this Association appreciate the fact that the farmer still needs the railroad, even if there are other forms of transportation that have been highly developed, that you need them not only to pay taxes and as to that matter of paying taxes permit me to pause and say that the railroads are the only form of transportation which owns its own rights of way and pays taxes on them. The trucks and bus companies do not own the rights of way over which they operate. This is your property, the highway, it does not pay taxes as does the railroad at the rate of $1,500 per mile per annum. The same is true of the waterways.

But, I say again that I assume you recognize the need of the railroads for transportation purposes. That is true, I take it, of the general agriculturist as well as the wheat growers of the west, the hog and sheep producers of the Middle West and the agriculturist of the various sections of the country, the citrus growers of California and Florida as well. When you need transportation, you want good transportation and if you are going to need the railroads, of course, you want them to give efficient service when you need them. Otherwise, they are of no real use to you. Now, in order to do that it is obvious to you or to anybody I take it that a railroad to continue to give efficient service must be able to earn enough to operate its property and also to have a reasonably good credit. I hardly think I need to follow that thought further than just to make that obvious statement.

Now, the railroads are not doing that today, and yet they are giving you good service. Indeed, the railroads are not only giving the American people and the farmers the best service that they are getting, but they are giving the best railroad service in the world as well as in this country, and at the lowest cost of any country in the world, and they are paying the highest wages and highest taxes, and continuing to give you better service than they ever did even if it is said by some of the politicians that the properties have deteriorated so that the service has deteriorated. You sometimes hear that, and you know that it is not true; actually the properties have not deteriorated, but they hav improved, they have new types of freight cars, the air-cooled passenger cars. The accidents on the railroads are actually fewer in percentage than in your own home work. The service is all right today. But can it be maintained under present conditions? It cannot and that is just as obvious as some of the other things I have said to

Now, why can it not be maintained? For this reason, the railroads during the past 11 years have been living off of what was the very excellent condition in which the properties were placed during the years between 1923 and 1930; they have drawn on that. They have hibernated in a way on that. But they cannot continue very much longer to do that. In order for the railroads to continue to render you the kind of service that they are rendering, the kind of service that you want, it

will be necessary for the railroads to expend billions of dollars upon these properties within the near future. How or where are they going to get the money? Just what is the situation today?

One-third of the mileage is in bankruptcy, fully one-third is hanging on the brink of bankruptcy. Less than one-third of them are earning or paying any dividends to their owners. It is obvious that capital cannot be secured to continue to support and maintain these railroads under present conditions. The thing that I want to impress upon you today is the effect upon the whole American system of economics, and upon your business as well as anybody else's, of the destruction of so much money that has been invested in these railroads.

But first, let me revert. What brought about their present financial condition? You people read the newspapers and you know what is said by the politicians about the railroads. There are those who say the trouble with the railroads is the railroad management. Now, I am not going to contend—it would be silly to do that—that railroad managers never make any mistakes in the handling of their properties. It would be just as silly to say that nobody in this audience ever made any mistake in the handling of his property or business. You have made mistakes. You look back and try to profit by them, so you will not continue to do them. Some of the railroads have made mistakes, perhaps all of them have made mistakes in the past, but this I do say, and anybody who knows as much as I think I do know after close association for the past 17 years here in Baltimore—17 years as general counsel and as a director of the Company, therefore, I think I have some knowledge of what has happened, and I say that today as a whole the railroads have been managed by men who not only are honest but who have worked up from the ranks, who know the business and who are just as capable as those who are at the head of other businesses in this country in their particular line—men like Mr. Daniel Willard, who began as a track man, then a fireman, a train master, a yard master, a workman in the shops before he began to be a high official of the railroad. Those are the men who have managed these railroads, and they have made no more mistakes than people in other lines of work.

Then, there are the people who say to you that the railroads have an enormous debt accumulated, that they are over-capitalized, over-bonded. That is just as false, and just as untrue, just as great a misstatement as the other statement. It is a matter of record of the Interstate Commerce Commission that of the $26,000,000,000 of capital invested, only $19,000,000,000 are outstanding in the hands of investors, and $7,000,000,000 are in the hands of the owners. That is the money actually invested in the property. But how about the actual value of the property? The Interstate Commerce Commission is required to make an examination of the property, and after 11 years of valuing these properties they record a loss perhaps of one or a half billion of the total outstanding capitalization of these properties. So, that statement also is false. But in addition to that they say there is too much indebtedness in the bonds compared to the stock. As a matter of fact,

there are fewer bonds outstanding today as compared to the stock. In 1928 or 1929, on railroad properties out of every thousand of dollars of capitalization of the railroads about $700 was debt; today only $445 of every thousand dollars of bonds to the total capitalization.

The bonds were issued against the property because they could be sold to the investor at a lower rate of interest than stock. People would not buy stock that would offer them 6% or 7%, but a bond could be sold the public sometimes at 3 or 3½%, 4 or 4½%. That accounts for the fact that more of the capitalization of the railroads is in bonds than in stock. So, those things are not true. The railroads have not been put in this position by mismanagement or excessive debt or over-capitalization, but because there was too much outgo and too little income. The income was too small and the outgo was too large.

In the past few years, the volume of business has decreased 50% from 1923 to 1930, and sometimes more. Business like steel and coal, the products and commodities from which the railroads drew their best income have dropped to as low as 20% and 25%. On top of that, with the decrease in the volume of business in the country as a whole, there grew up this competitive transportation, trucks, buses, waterways, and after all it is not really fair that they should compete with the railroads. Suppose you had a neighbor farmer that the Government came along and subsidized and put him in a position where he could compete unfairly with you. That is just what has been happening with the railroads. Your Government has expended some 25 to 27 billions of dollars in highways entirely with your approval and consent for your use, but that has been taken advantage of by the big touring companies, the bus lines and the trucking lines that are competing with the railroads, and on a highway owned by you and by the Government which they did not build and did not contribute to at all, and which they do not have to maintain except in part, because an individual, a private citizen is the largest contributor to the cost of construction.

But you consent to that. Your Government has expended in deepening the inland waterways of this country large sums of money and ships are invited to go upon those waterways and transport goods without making any contribution to the vast expense of maintaining those waterways. In the West, the Government expended $150,000 a mile to deepen a channel to a nine foot channel and then spent about $5,000 a mile to maintain that channel and to maintain those locks. Now, those expenditures are made by the Government by popular approval, and the ships have practically free transportation. Take the system on the Ohio and Mississippi, where the steel and coal people use it more extensively—I know very little farm produce is carried there, but what about the cost? The Government could have built a good railroad on both banks of the Ohio River for the $150,000 it expended, and maintained it for the $5,000 a month it cost to maintain that waterway. It is a bad economic proposition, so far as your Government is concerned, it destroys the Baltimore & Ohio Railroad and other railroads that have to compete. Thousands of tons of steel pipe used to come to Baltimore out of

Pittsburgh, thousands, to be transported to the Pacific Coast, and now they are placed on ships and go down the Mississippi River to New Orleans, and go through the Panama Canal, and the railroads get none of that hauling. The Government gets no revenue.

Those are the facts; those are the things that have put the railroad companies where they are. Whenever a politician embarks upon a program to put the blame upon the railroads and the management, he just does not know what he is talking about.

Now, I come to my main subject. What is the result? I told you that $19,000,000,000 of railroad stocks were standing in the hands of the investors in this country. They are worth today less than $10,000,000,000 in the market; they are worth, indeed, only eight or nine billion. But $26,000,000,000 were invested. Those securities represent $26,000,000,000 of gross capital. Where are those securities? Only the educated people think. The stocks of those railroads are owned by what President Lincoln termed the "common people." You take these railroads, the ordinary stockholders hold only 40%, the railroads, and the people own 60% of the shares of stock. Of the bonds, 12 billion of bonds, 7 billion are held by the savings banks of this country and the insurance companies, 7 billion out of the 12 billion of bonds. Now, there are 44 million people in this country who have money in the savings banks, and 64 million people are interested in the insurance companies, own policies in them. Those insurance policies and those savings are based in large part upon the railroad securities which the savings banks and the insurance companies have bought; so, when we, the American people, induce our Government to embark upon a policy of discrimination against the railroads and of destroying these properties and these railroad securities, we embark upon a policy of destroying the Insurance Companies in which most of us pay premiums every year. We are jeopardizing those Insurance Companies and those savings banks in which 44 million people have their savings.

What has been the effect? We have in this country what we know as the capitalistic system. That is a system of private ownership as contrasted with the communistic system where the State owns all the property. This private ownership of property, this capitalistic system is built upon the theory of profits and investments, and if you start out and destroy all the accumulated savings of the people of this country, or a very large part of the accumulated savings of the people of this country, you are not only making bad business, but destroying our economic system. The Communist would accomplish this by force, he believes in destroying all private capital and turning it over to the Government—that is his system—by force and violence, if necessary, but the same procedure can be accomplished through Governmental action, just as surely as though by force and violence even without the masses of the people realizing what is taking place or why. That is just what we have been doing in this country during the past few years. We have been destroying 15 billion of dollars of the people's savings invested in the railroads, and not only that but we are

destroying other billions of dollars invested in steel mills and coal mines, supported mostly by the railroads. Can you continue that policy in this country without destroying the country itself?

Suppose by some process today the business of 1928-9 could have had the absolute assurance that it would continue to be guarded. What would have happened? Instead of the securities of those railroads being worth only 9 billion today they would be worth 29 billion. If you could add 20 billion to the wealth of this country overnight, you would take the headache out of the farmer as well as out of the railroads. But by dissipating our accumulated capital and savings by any process, whether by violence or force or Governmental policy, and impoverishing the country, you reduce the prices of all products including your own as well, unless that is checked by the Government itself, and no Government has yet been successful in that action as a matter of honesty.

Now, that is the situation, and I have a right to talk frankly to you this afternoon about it. This has happened by Governmental policy. If I were President of the Government I would not perhaps say this, but I am not. Nor am I a railroad President. I still make my home in the country and I am speaking my own mind today. Somebody ought to do it. That is the situation. You ask me where we are going from there and what are we going to do. It is much easier to tell the story than to tell how to get out of it. It is much easier to get in a mess than get out. I understand it was not very hard to push Humpty Dumpty off the wall, but all the king's horses and all of the king's men could not get Humpty Dumpty back on the wall again. I do say this, the President of the United States appointed a committee of railroad presidents and railroad labor leaders, and they have made a report, and I am in sympathy with the recommendations of that report. I am in sympathy with the subsidizing of the waterways and channels in the country by the Government. I am in sympathy with the recommendation that the Government sell its own barge line on the Mississippi River competing with the railroads. I am in sympathy with all the recommendations that that Board has made, but it would take time for the railroads to come back even with the normal return of business that is predicted. It will take time for the railroads to get themselves fixed up, their properties brought up to the standard where they should be for future maintenance. Other than that, what can be done? I am thinking of something that Congress could do, or the Federal Government could do immediately that would be helpful, and that is the enactment of a law which would help the railroads, and that is to reach an agreement, an arrangement with the security holders, the bondholders and creditors whereby interest may be deferred or reduced temporarily. That would be an improvement. That, at least, would give them an opportunity for an improved situation in their business, without throwing these railroads into bankruptcy with the destruction of stocks and bonds and a long drawn-out and expensive proceeding that is necessary in bankruptcy. That is the only thing that I can suggest as of vast and of immediate importance, that the security holders voluntarily refrain

from collecting their interest at this time. May I ask that you give that serious consideration, and if you can see your way either as a body or as individuals to advocate and to help secure the enactment of such a law I think that it might save many of these railroads from bankruptcy. Certainly it would go far towards that end.

Now, my friends and neighbors, for it is only 25 miles from my home to the Maryland line, only 25 miles from Cumberland. When I was a boy we used to ship peaches into Cumberland, we used to sell everything that came off of the farm, and it was in that town that I bought the books that started me to reading law, and caused me to want to be a country newspaper editor. I feel I am also a Marylander. I have been your neighbor all my life, and it has been a great pleasure to have this opportunity to meet and greet you. When I go back to my home from Baltimore, I drive through Frederick and Washington Counties, and I look over that beautiful country. We did not have such roads when I was a boy. My father was a mountain farmer, not a river bottom farmer. I am delighted to come and greet you Farm Bureau members, and I thank you very much for your attention.

MR. ETZLER: At this time, on behalf of the Maryland Farm Bureau, I wish to extend our sincere thanks to Mr. Cornwell for his very helpful address to us this afternoon.

The next speaker for the afternoon will be Mrs. Charles W. Sewell, Administrative Director of the Associated Women of the American Farm Bureau Federation, who will speak to us on "When Our Ships Come In."

WHEN OUR SHIPS COME IN

MRS. CHARLES W. SEWELL

Mr. Chairman, Ladies and Gentlemen:

The other day in the City of Chicago there came into the office of a distinguished physician a little Jewish gentlemen, who wished to secure the advice of this eminent doctor. The price for the first visit was $25.00 and then the patient might come back as often as he wished for $5.00 a visit. The little Hebrew gentleman was very anxious to have the doctor treat him, and he did not like to pay that $25.00, so he waited until several appointments came out of the private office, and finally when one woman came out he sidled up to the doctor and he said, "Vell, here I am again," and the doctor saw what had happened and without changing his expression at all, he said, "Very well, go home and continue to take the same medicine as I gave you the last time, and that will cost you $5.00."

So, as I come back to you again so many times, I am perhaps bringing you the same message I have always brought. This time I was told that I might choose the subject "When Our Ships Come In," and so that is what I am going to talk to you about this afternoon.

Ships played a great part in the development of our country. When I go, as I do, here and there on my journeys, and I see the ships, I think

of the wonderful work carried on through the ages by means of ships. I go many times thru Jackson Park in Chicago, the place where in 1893 the Columbian Exposition was held, the first world's exposition or fair, and I see there an exact replica of the flagship of Christopher Columbus, the Pinta, a tiny little boat, and it fills me with much admiration for Christopher Columbus and his men when I see that little boat, and I realize what it must have meant to those men when they put out to sea, trusting to the elements of wind and water, and not knowing what their future was to be.

Then, I am always filled with a great deal of admiration for those who came over in the Mayflower. It must have been a much bigger boat than history tells when we consider how many people claim to be descendants of the people who came over in it.

Then, I think of that ship with which farm people have been particularly interested, especially during these hard times—that ship of Oliver Perry, on which he said "Don't give up the ship."

I think of the slave ships brought to this country of ours, carrying not only the unfortunate slaves and changing our economic condition, but contributing largely to the reasons which brought about the war between the States.

I think of the Lusitania which went down with so many unfortunate men and women and children, and the sinking of which had a great deal to do with the declaration of war on the part of America in the great World War.

I have watched with a great deal of interest the ships in various harbors in this great land. I have stood in Boston harbor watching the boats come in, and have seen the little fishing boats, and the larger boats bringing the produce of the other parts of the United States and of other nations. I have stood in New York harbor and have seen the great liners which lie there waiting to go out. I have stood in the harbor at Duluth watching those great vessels as they put out to sea; and I have stood on the shore looking out across the broad waters of the Pacific at the ships coming to us or embarking for the Orient. I have seen the ships plying in the Gulf of Mexico, loading and unloading the produce of other nations, carrying out the produce of the United States.

And so, I want you this afternoon for the little time which is allotted to me to think of another fleet of ships which have been built. Perhaps you did not realize that during the past twenty-three years the Farm Bureau has been building a whole convoy of ships. I want you to think with me about these ships.

The first ship that comes to my mind that the Farm Bureau has built, and I think we may call it the flag ship, for it is FRIENDSHIP, for you people here in Maryland have come to be very dear to many of us in other parts of the United States. That Friendship has been carried from one section of America to another. This afternoon you and I know many farm people in other parts of the United States. We call them

friends, we call them by their first names, we are glad to meet them and engage them in conversation, and sometimes I think of an annual meeting of the Farm Bureau as a meeting of the League of Nations. It must be very like that. You are always so glad to see the friends that you expected to see there, and a little disappointed at missing some of the people that you expected to see; and finally you are somewhat amazed to think you managed to get there yourself. So, this friendship means a very, very great deal to all of us.

Then along with that convoy goes the ship called FELLOWSHIP and one called COMPANIONSHIP, and one called LEADERSHIP, and as I look about this afternoon and I think of what Leadership has been developed and found among the men and women of the Farm Bureau, and of the work done for you and me by some of these people, sometimes I am just a little bit worried; we have developed so many of these friends that go on and we wonder if others can do their work as well. I think with a great deal of pleasure of one of the finest things that has been developed by our leadership when we are able to give such a friend as Chester Davis to become a member of the Federal Reserve System.

Then, connected with Leadership, you must have the FOLLOWSHIP work along with the Leadership. There are, after all, only a few leaders, but there must be many followers, and after we think of it, to follow well is very important. We should try to develop our Followship.

Then we have PARTNERSHIP, and you have shown a wonderful example of Partnership this afternoon when you brought into Partnership these fine young farmers, the Future Farmers of America, into a close partnership with you. Also, there is the partnership between the men and the women of the Farm Bureau. I heard a story of some one telling of the creation of Adam and Eve, and he said "I suppose it was a good thing that Adam was created first, for if Eve had come first, they would still be fooling with Adam." In this great movement we find the women coming along with the men. They have so often stood back of the men's program, but they do not want to stand too far back, they want to stand shoulder to shoulder and enjoy the same advantages for learning or education and all those things which have a direct bearing upon the future of the American farmer. The other day in a meeting held there were ten or twelve men present and only one woman, and some one said it was funny there was only one woman to all those men, and I said, "No, it filled me with admiration. You do not need but one woman. It takes ten or twelve men to talk the thing over but only one woman to do the real work." I was reminded of these lines which came to me and with which I think you are familiar when some one said the farm woman is still just a door mat, and I want you to listen to this; we may be door mats, but as the years pass we will prevent the men from going in with muddy feet.

Then, there is another ship that the Farm Bureau has been building that I want to commend to you as one of the finest of the ships and that is farm OWNERSHIP. I heard the Governor of a great State tell

a little while ago of the experiences of his boyhood when in nineteen years they changed farm homes seventeen times upon the first days of March; and he said that he remembered with a great deal of sadness how his mother always was very much troubled during the last days of the time, along about Christmas time each year. His father did not get very much concerned, and the children rather enjoyed the change, but the mother had a few choice bits of china, and a little furniture and she was always worried about them, and each time they moved she would go back in the little home for a short while to say goodbye, and each time they moved it was to a little sorrier, a little shabbier place, less attractive. My friends, Bolshevism will never flourish in a country where people own their own homes, and I like to think that part of the best work that the Farm Bureau has done is in securing easier credit for the farmers in America so that they may own their own homes, and many of our States helped to relieve tax burdens on real property. But I must not stop too long on that.

Then we have WORKMANSHIP and CRAFTSMANSHIP. We are in close partnership with our Farm Extension Service, with the County Agents, the Home Extension. It is a matter of great pride just how you can describe the Farm Bureau MEMBERSHIP of men and women. I would say they are the cream of the crop. I believe that, and we have only to go to the records of the Master Farmer, the Master Farm Bureau, because without exception if you look at the leading farmers in any section you will find that those farmers are members of our Farm Bureau, and with those I would add these young farmers. They are the ones that have made America the great nation that it is.

There is another ship I think you will agree is one of the most important in all of our convoy, and that is the one I would term STEWARDSHIP. May I tell you how we tried to increase production in our part of Indiana a little while ago. I saw a photograph which brought that to my mind; it was a photograph of the largest load of corn ever hauled into our market. It created a great deal of amusement. There was a prize offered for the largest load by one of the wagon manufacturers. The man bringing it in had to put on six horses, had to have the telephone wires and the telegraph wires taken down to get it across the railroad tracks. All up and down the road they were calling that "Frazier was coming."

A little while ago I was in Utah at the Farm Bureau there and I met the Governor, one of the most interesting men I have ever met, a real aristocrat, yet a man who is a real friend of the farmer. He read excerpts from one of the messages of Brigham Young to his people. He told how the people tried to farm and how they became discouraged and wanted to start to dig for the precious metals. This was the message of that great man, a man of wonderful vision, "We will not dig our minerals, because if gold and silver were discovered and the world came to us we would not have enough food to take care of the people. We will dig out of the soil the things that will assure us of plenty of food."

They made that State a great State—it is called the cross-roads of America. So, today, when we are looking for all sorts of ways of making money and producing more wealth than by agriculture, I would commend those words to you.

There is another ship which the Farm Bureau should consider and that is CITIZENSHIP. Do you remember upon the 8th day of last November all the farm men and women going to the polls and voting? Did you all go to the polls that day? Did you stop to think, as you did that, how much that right, that chance to express your own choice, was worth, how much the peasant of Russia would have given you for that opportunity? Did you think what it would have meant to a man or a woman living in Germany or Italy to vote exactly as you wanted to vote? We should all be so grateful to Almighty God that we do live in this great land of the free, the land where men, working men and women have the right to vote as they wish. We should all thank God for the rights of Citizenship.

Then, we have helped with the development of STATESMANSHIP. I like to think that several of the Governors of the States are members of our Farm Bureau. I had occasion to visit the State of Vermont, and I worked there with Governor Aiken, a member of the Farm Bureau. I expect to go back again. I like to think that the first Lady of the land, Mrs. Roosevelt, is a member of the Associated Women of the American Farm Bureau Federation. The President also is interested in our Federation. So, we have had our part in the development of Statesmanship in this great country.

Another little ship comes along; one that I will label SPORTSMANSHIP. That is the reason you were willing to let me, a woman from Indiana, come and talk to you. It was a long time ago when I first came to Maryland, down at Cambridge on the Eastern Shore of Maryland, and I have been here many times since. Perhaps that is the reason I have loved Maryland so much. Sportsmanship between States, and between sections, and don't forget that in the next few years that is going to mean a great deal in the problems that we will have to meet, problems of adjustment. I think we are very much in the same condition as the little boy who asked his father one day "How old will I have to be before I can do just as I please?" His father laid down his bread and butter and he said, "My dear child, nobody has ever lived that long yet." So I am glad that we have Sportsmanship.

And there is another ship that I want you to consider and that is the one which I would label SALESMANSHIP. I am very sorry to come at this point with the statement after the very fine reports given this morning of the advances made in selling by the cooperatives in 1937, but this is the thing that interests me more, is the small amount in comparison with the amount it ought to have been and how much it could have been increased. The other day in the Chicago Daily Tribune, not exactly an agriculture publication, there was printed a very interest-

ing story, a photograph of the man who had topped the market with his cattle. There was the picture of this gentleman, I have no doubt he was an independent farmer, a man who was producing his cattle and marketing them as he saw fit. Here was the farmer who had produced the cattle while a representative of the packers looked at the cattle and set the price. I think the farmer should get busy in the building of salesmanship.

But I must not take too much time. One ship that I must mention is WORSHIP. I like to think that the women of the American Farm Bureau have done much toward bringing close connection between the Farm Bureau and the church, the rural church, and I like to think that a little red-headed minister working in Kentucky, one of the finest gentlemen I have come to know, works through the week as a part of the Kentucky Farm Bureau, and on Sundays goes into his church and preaches. He says that the work being done for the rural people through the Farm Bureau is work done in the collective way, and is doing as much good there as when he preaches.

As I look at all the ships in which we had a part in building, I found one that I thought would be the very largest of all of this convoy of ships—I thought that MEMBERSHIP with all this wonderful record of performance would be the biggest, but I was surprised that it was back of all the others, not nearly as big as I thought it should be. I think of the story of those ten lepers suffering from that terrible disease, and the ten were healed and went away and you remember that only one returned. "Ten were healed and where are the nine?" that was the question. I feel that in the year to come you are going to do a great deal more in building this ship so that it will rank with the larger ships.

Then, when all our ships come in, there is going to be one ship which we will call PARITY. That ship will be large and well equipped. I want to remind you farm people and everybody else that when our Parity ship comes in, it will benefit all classes of people, not only the farm people, but the industries, the manufacturers as well. There will be bands playing, because I believe as truly as I am standing here before you this afternoon, that if you take the income of American agriculture and multiply it by seven you will have pretty well the income of the rest of America. When the farmer gets money with which to buy presents for his family, machinery for his farm, automobiles, and other things, he will benefit not only himself, but will put to work this great line of industrial and manufacturing workers, and that will work to the great interest of all the country.

I would not leave you, friends, this afternoon, without calling to your thoughts and mind a ship which I might call our GHOST ship, and on that ship will be the men and women who have worked with you—Mr. Cohill, Melvin Stuart, Mr. Davis, Mr. Cockey and others, for it is upon the labors which have been done by those men of other days that we

have come to realize the success which we have attained, and these lines come to me which I would like to leave with you:

New occasions teach new duties,
Time makes ancient good uncouth.
They must upwards still and onward
Who would keep advance of truth
Lo, before us gleam the camp fires
We ourselves must pilgrims be
Launch our Mayflower and steam boats
Out across the stormy, wintry sea,
Nor attempt the future problems
With the past's blood rusted key.

MR. ETZLER: We surely wish to thank you, Mrs. Sewell for that wonderful address.

The next speaker is a member of the Board of Governors of the Federal Reserve System, Mr. Chester Davis. He will speak to us on "Agriculture, Industry and Labor."

AGRICULTURE, INDUSTRY AND LABOR

CHESTER C. DAVIS

Thank you, Mr. Etzler, and men and women of Maryland. I saw the printed topic assigned me was "Money and Credit in Its Relation to Agriculture." I am delighted that the Chairman made the change, for I really want to talk to you on this subject, which includes things that go to make up what we need more than anything else, a constantly expanding national income.

You know, I was talking to Joe Frank Porter over in Washington, and I tried to get him to come over here this afternoon. He is President of the Tennessee Farm Bureau. He could not come but he said "I really envy you in your chance to mingle with the people in Maryland. I have been over there and never in any place of the United States, with the exception of Tennessee, can you see as intelligent and fine a group of men and women as you will see over there in Baltimore." Looking at you now, I am inclined to agree thoroughly with Joe. I believe I do not even want to except Tennessee.

The United States never before had as many of its citizens earnestly trying to find the causes and suggest the cures for our economic ills.

The lack of agreement in diagnosis and prescription suggests that perhaps, as fallible human beings, we are like the blind men who described the elephant. One grasped him by the tail and said the elephant is like a rope. The one who felt his leg thought him like a tree. Another who bumped into his side was confident that the elephant resembled nothing so much as a wall; while the last, who reached the trunk, though he had hold of a snake.

We who are gathered here today are primarily concerned with the problems of agriculture. Elsewhere people are meeting who are con-

cerned with labor, or money and banking, or transportation, or international trade, or manufacturing, or distribution—each has its difficulties. There is the risk that as we become wrapped up in the study of one of these features of our complicated structure we may lose sight of the great central national problem—the elephant, if you please.

So today, instead of confining my talk strictly to agricultural matters, I want you to take a look with me at some conditions of national concern which, while outside of the farm field, still have a powerful influence on the business of farming.

I think most of you will agree with me that there is no one simple farm problem that is common to all farmers and is susceptible to one simple solution.

Agriculture is out of balance with other elements in our economy. In November of last year farm prices were 94 percent of the 1909-14 level. The index of prices of things farmers buy was 121 percent. Industrial wages were 207 percent. The national economy is pretty lopsided with its price-structure out of joint like that.

There is no need for me to expand that idea with a lot of figures. Farmers of Maryland and elsewhere are only too familiar with it. The question is, what can be done to remove or correct the disparity?

Most of our thought has been given to a direct attack on the matter of prices by working on the supply of farm products. First through cooperative associations we sought to feed the market what it would take at a fair price. Many of us worked for years to try to get our farm exports handled in a way that would adjust supply to demand in the domestic market at a fair return to the farmer. The government, through the Farm Board, sought to help both through the cooperatives, and through holding excess supplies off the market in times of surpluses and low prices. The farmers are now engaged, with their government, in a gigantic effort to try to adjust their production in many crops to what the market at home and abroad will absorb.

Let me digress to remark that, as one who was concerned with the administration of the national farm program from 1933 to 1936, I get very tired of hearing the agricultural efforts criticized by the unthinking as "programs of scarcity." I promise not to use many figures here this afternoon, but there are a few which I have to use to set the record straight.

This last year, while farmers were producing more than ever before in the history of the country—more than they produced in 1919 or in 1929 or any other year—industrial production was reduced 35 percent below the quantity produced in 1929. Incidentally, the index of agricultural prices fell off one-third in 1938 compared with 1929. The prices of what farmers buy fell much less.

I repeat—the farmers kept up their volume of production, but manufacturing and mining industries cut their production down to the extent of 35 percent. Factory payrolls dropped 30 percent from the totals of 1929.

Take a specific instance that comes close home to the farmer. The production of farm machinery fell from an index of 190 in September, 1937, to 96 in September, 1938—almost exactly in half. Payrolls in farm machinery factories fell from 204 to 87—more than half. I don't need to tell you, but I'm asking you—how much did farm implements come down in price last year compared with the year before?

In other words, farmers keep on producing; factories shut down when output cannot be sold for a price that covers costs and a margin of profit, even though millions of workmen are plowed out into the street as an unfortunate result.

This condition suggests to me that part of the farm problem, and a large part at that, lies outside the farm field; that the policies of non-agricultural industry, of organized labor, and of the government with respect to both, may have enormous influence in determining whether the farmer prospers or suffers in the exchange of his goods.

If we examine each separate problem in our economy, I suspect we will find that in every case part of the trouble lies off in some other field. Labor suffers when farmers lack purchasing power to buy the output of city industries. Railroads suffer when volume of business lags. In other words, this isn't a rope, or a tree, or a wall, or a snake—it's an elephant we've got on our hands.

As I see the central problem, it is this:

We have millions of men unemployed; we have the greatest endowment of natural and mechanical resources known to the world; and we have the monetary basis for an expansion of productive activity far greater than ever existed heretofore. Yet opposed to these in stark paradox we have an almost unlimited gap of unfilled human wants and needs. I submit that the challenge presented by that combination is, after all, the nation's economic problem number one. Work it out, and many of the difficulties of the farmers and of the nation will shrink and disappear.

Dr. E. G. Nourse of the Brookings Institution once said: "Agriculture, industry and labor ought to pull together like a three-horse team to produce all they can."

That's a good thought. But most of you have worked a three-horse team. You know that one horse may be up in the collar trying to pull the whole load. You know that the others may let the tugs go slack now and then. Perhaps the other horses don't slacken up because they want to. Maybe there's something wrong in the way the harness fits. Maybe there is a sore shoulder or two. At any rate, for some reason they're not pulling their load. We are not getting full production.

Lately we've made it a four-horse team. The government is pulling, too, and still we're not getting the job done that is here for us to do. I think most any farmer will agree that the extra horse is needed with the team until the sore shoulders are well. But he also wants to know that the other horses are getting collars and harness that fit so they can pull their share of the load. If that is done, perhaps we won't

have to borrow the extra horse all the time. Maybe we will need him only when the plowing gets especially heavy.

A moment ago I referred to this central problem as a challenge—the problem of getting unemployed men and resources to work producing useful things. I used that word—a challenge—because other nations seem temporarily at least to be making headway through forms of government and at a price which we do not favor here. The price they pay is the complete subordination of the individual to the State.

The task ahead of us is to bring about such a rate of production that all of our effective man-power may find useful employment. Most of us favor accomplishing this expansion under private initiative and direction to the fullest extent that is possible.

The needs of the people are great enough to absorb production in the aggregate at a much higher rate than we have ever attained. Expansion to that point is safe as long as we produce what the people need and at prices at which production will be absorbed.

I should say that from the point at which we stand in January, 1939, economic activity can rise and continue to expand provided (1) increasing purchasing power can be generally distributed; (2) industrial prices and wages do not rise *because of restricted production;* and (3) if speculation and bad price dislocations can be avoided.

All of us need to address our attention to this central problem. I mean all of us—those who are temporarily in positions of Government responsibility, the farmers, labor, industrialists, the press, the educators, the carriers, all elements in our society. I do not offer to solve the equation, but we do not have all eternity to work it out in.

I do not believe we are going to meet this challenge unless the government, the employers of labor, and the leaders of organized labor themselves, re-appraise their policies and true them up with the all-important objective of getting the unemployed into useful work and maintaining conditions that will give them work to do.

The American Farm Bureau Federation recognized the problem and advanced a suggestion at its convention in New Orleans last month. I quote that recommendation from the concluding paragraph in the first resolution adopted by the convention:

> "Believing as we do that recognition of these principles by all groups, and translation of such recognition into action, is the only way out of our economic difficulties, we respectfully urge the President of the United States to call together representatives of industry, labor, and agriculture selected from a list of those recommended by the duly selected leaders of the three major economic groups, to discuss a program of action designed to promote economic balance between these groups on a basis that will permit full utilization of our great productive resources and we further urge that in view of the serious effect of the present maladjustment, these representative leaders be kept in session until they have agreed upon such a program."

I submit two questions for your consideration:

Would not manufacturers and other non-agricultural producers be better off if they held to lower prices and larger continuous production when demand starts to pick up, looking to volume production instead of increased prices for their profits?

And would not labor get higher real wages if its leaders fixed their eyes on the amount *earned* at the end of the year through steady employment in producing things people need, rather than on the highest attainable hourly wage for a minimum of production?

The principles suggested by these questions for industry and labor are the principles agriculture has always followed. If they are put to work, the farm problem will become far simpler to handle than it is.

Please do not misunderstand my references to the wage scales and practices of labor. Farmers want labor to have higher incomes. They want to see labor income raised, however, by more continuous employment in the production of things this country needs and, with our resources, should be able to afford—better houses and clothing and shoes; adequate and comfortable home furnishings, and the necessities and comforts now denied so many of its people.

Neither do farmers, in my opinion, begrudge industrial capital and management their adequate rewards, but they think it poor public policy to try to insure and protect those rewards by rigid prices and high margins at the risk of falling production and unemployment.

We saw the wrong kind of price policies in building materials, and the wrong kind of labor policies in the building trades, combine to kill off a promising rise in residential building in 1937. It will be interesting to observe whether there is any general recognition in 1939 of the set-back those earlier policies gave us.

Economists call the aggregate of income produced by all the workers of the land, our national income. It is possible to make that income steadily increase. If it does, troubles that seem so enormous today will give us decreasing concern—the state of the government budget, the condition of the railroads, and the economic health of agriculture, for example.

The farmers of this section of the country are directly and vitally concerned. If we had full employment at good wages, the consumption of fruits and vegetables could be doubled. The market for meats and dairy products would be vastly broadened and the returns increased.

The factor of national income is the thread which runs through the welfare of agriculture in Maryland. The farmers of this state and of the other states of the North Atlantic seaboard are directly dependent for their prosperity upon the great consuming centers nearby. As factory payrolls in these cities increase, the people will have more money to spend for your products. The dependence of farmers upon consumer buying power is clearly illustrated by the fluctuation of dairy prices in close relationship with factory payrolls. And the prosperity of these cities upon which you so greatly rely, is not a thing apart. It is dependent on the purchasing power of the entire country.

Adjustments in the business of farming, with its more than six million individual units, will continually need to be made. In some areas, largely dependent upon a single crop, the adjustments will be especially difficult. Continued help of the government will be called for.

But if ours can be an expanding economy; if we can get all elements of the team to pull together, producing year by year a larger national income, then farmers can face the future with hope and confidence, so long as the whole country keeps on the upgrade.

Now in conclusion: We should look upon agriculture as a part of the economic fabric of the nation. Your welfare is linked to the economic welfare of the people employed in the mills and factories of your great cities. And the roots of their prosperity in turn are watered and fed by the farmers of the entire nation.

The question that faces us all is how to employ our people and our resources in the increasing production of useful things that will raise the standard of living of those who work. America will never be satisfied as long as unemployment and want are companions in our land. As pioneers in the biggest and strongest democracy we must find the answer.

MR. ETZLER: Mr. Davis, at this time I want to thank you for your talk.

The last address of the afternoon will be given by Dr. Mark Dawber, of the Home Missions Council, on "Rural Life and the Future of Civilization."

RURAL LIFE AND THE FUTURE OF CIVILIZATION

DR. MARK DAWBER

Mr. Chairman, Ladies and Gentlemen:

Don't look so serious, the first hundred years are always the worst. I am here to represent the Church, the Home Missions Council, but I would like to say that I do not represent some of the things that you think of the church. It is not always fair to judge by appearances. I hope that Mr. Davis will not take exception to what I have to say. He thinks that what we need more than anything else in the United States is a constantly expanding national income. I shall say at the beginning that what we need in the United States more than anything else is more honest people and less scoundrels. What we need in the United States is more goodness and less greed. What we need in the United States, and what farmers need particularly to deal with the other fellow is more character and less corruption. What we need more than anything else in the whole wide world is more Godliness and less Goddamness—if you know what I mean.

Mr. Davis referred to a number of people who are to help the Government, he referred to big business, he referred to many things, but he never once mentioned religion. I am sure he did not intend to omit that, he intended to include it, but I am very sure you will waste your time unless you have more character and less greed and these

problems he has talked about will not be solved. Now that is by way of introduction.

Mr. Chairman, it is really a great honor to come to represent this afternoon the rural church. I will speak with you for a few minutes on that. The importance of rural life and its place in civilization is well known. I come bearing the greetings of all the Protestant churches in the country. That is hopeful that one man can do that. You would not think that were possible, but it is. I have the good fortune to represent 108 out of the 120 churches, rural churches in this country. Those that are not in will be in soon. This is a day when cooperation has come to extend to religion as well as to other branches of life. I will go even further than that. I say I represent the Protestant churches, of the other groups, both Catholic and Jewish, we are agreed when it comes to human life and its needs. That is very hopeful, is it not?

I suppose there are those who would question what I say, but I know whereof I speak when I say in the beginning unless there is more character in the hearts of people these problems will never be solved. The farmer more than anyone else has been at the mercy of scoundrels. They still are to some extent. I will prove that or go out and eat my hat.

Another reason, and the reason I expect that I have been asked here this afternoon, is that I know rural people. When I say that I know them, I mean that I can always tell a group of rural people by the handsomeness of the women and the homeliness of the men, and this afternoon I might even go a step further and say even the men are handsome. I want to say this to you, officially, we are ready to join hands with you to help solve these problems before us.

I want to talk especially this afternoon about the place of the rural life in civilization. If I had time I would go over the seven great civilizations of history, seven of them have passed across the horizon. They have gone down into dust. They have a name in history, some of them have accomplished many things but they have failed, and the principal thing that has led to the decline and fall of good civilization, if you would analyze them, you would discover that all of those civilizations, their downfall came from the same source. Read Gibbon on the Decline and Fall of Rome. He took two volumes to tell the story, he really could put it in almost one sentence. There is no exception to the rule. Whenever any nation or any civilization has compelled its rural people to become peasants, to live a life so low that they would have to jump up to touch bottom, when any nation has allowed its rural people to arrive at that status, that nation has written its own death warrant, there is no exception to that rule.

How any nation can expect to attack the very vitals of our rural life and still expect to make progress is a question. There are those of us, students, who do not believe it can be done. As a matter of fact, we know it cannot be done. I have before me a clipping from the New York Herald-Tribune of yesterday—many of you may have read

it—referring to sharecroppers and the problems of today. God help us! Bankers won't do much about it. Big business won't do much about it. Governments try to do something about it, but I am going to tell you this, unless some way can be found whereby a quickened conscience is brought to the citizenship of this country in regard to the way it has abused rural life, unless that can be improved, I have not very much hope for the country.

Bear with me for a moment while I try to put before you some of the more important factors which are necessary in rural life, and without which this civilization cannot last. There is no foundation upon which to build. Last summer I had an interesting experience. For two weeks I was at the University of California, at Berkeley, and I saw each day this printed sentence, which I will use for my text this afternoon—I am sure you will permit me to have a text, and this was the text, "To rescue for human society the native values of rural life." The objective of that institute was to try to get back for rural society these values. That suggests three things to me. That suggests first of all that there was something in rural life that cannot be discovered in the city, something native to it that the city cannot produce. Our cities consume that, they destroy that. Rural life produces that. The important thing about rural life is its creative processes—creative processes—and only as those parts of our country that have been within that area that produces those creative processes are protected, is there hope for the nation. I say our cities do not have that, they do not produce that, they are not creative in the sense that the rural life is. We are now dealing with the very elements of life that rural life produces which the cities cannot produce.

Second, these values are not merely important for the country, but they are even more important for the city; that unless rural life can go on producing them, there is no hope for the nation.

Third, that shows this—that as our national life is now constituted, it is in grave danger of losing these values.

I was impressed with another sentence when I was in Washington. I like to stand outside the Union Station and read those illuminating sentences to be found on the stones of that building. Here is one of them that suggested the answer to the one I have just read, and that is that the Farm is the best home of the family. It is the source of all National welfare. Some of our best big people have not discovered that yet—the source of all national welfare, the foundation of civilization, of civilized society. That emphasizes the importance of rural life in the building of a civilization. The farm is the best home of the family, the best place for the survival of the race. Dr. Baker, an eminent biologist, has called our attention to this fact—I have to discuss the biological situation, for after all, you know the biological aspect of the thing is important, even from the point of view of civic interest you just have to have people, even farmers are interested in that aspect. You have to have people. I used to have a woman in my parish in Pennsylvania who would meet me on Wednesday or Thursday

and say "I was not in church last Sunday, but I was with you in spirit." The Lord preserve me from a church full of spirits. I would rather have them bring their bodies around, I could do a better job with them. A body without a spirit is a corpse, but a spirit without a body is a ghost, and I do not want to fool around with ghosts. The biological feature is important. I am not making an effort to make a hit with the country people, but I do want to call to the attention of you farm people and you city folks particularly this fact, that unless you can protect these country communities, in twenty years many of our cities will be barren.

I am going to prove that to you. The other day I was walking through the Empire State Building in New York, and the man I was walking with said to me "Unless something can happen very soon, most of these buildings will be empty." As a matter of fact, they have a new name for the Empire State Building now, they call it the Empty Building. Now, on the biological side, I am trying to drive home this fact to you farmers—the farmer is more important than the farm. His wife, his children are more important than the cows and the chickens. That is the angle I am talking about this afternoon, and if some of you would think more about your wives and your children, than you do the chickens and the cows on the farm, probably from that angle something really might happen in this old world.

Now, I get back to this—I wonder whether you know this. In the great cities of this country, I am talking about places of ten thousand and more, in the last census only 4% of the families in the cities of this country have four or more children, and in those four percent most of those families in our large cities are foreign-speaking, and not Protestant—I am speaking now from the Protestant angle, although that does not matter very much. I want to point it out to you, however. Most of the town and country communities are made up largely of your old American stock, but in your towns of twenty-five hundred up to ten thousand, 38 percent of the homes have four or more.

I am going to say to you this afternoon that the most important value in America today is the boys and girls of this country. Does anybody want to take issue with me on that? If so, the door is wide open for you to do so. I am living for the first time in a large city. I am living in an apartment. It was advertised as a four-room apartment. What it really is is one room with four doors. I can imagine my mother bringing our family up in that apartment. In the cities we have more population than we can find room for, but not in the country. My mother just could not have brought up a family in that apartment. Oh, yes, I know what it is to live in the city, the furniture crowded in corners, a little pot with a geranium in the back window. Baker tells us that our large cities do not reproduce themselves, they are dependent upon the country communities for the people who will occupy them.

There are two questions that I want to ask you that are more important to you than anything else you are discussing here today. I

would not have wasted my time in coming here if I had not thought it important to bring this to your attention. I have come down here just to say this one thing, more important than anything else you will discuss. I have two questions. I want to first of all ask this—Can we build the kind of rural America that will be sufficiently appealing in terms of its economic life to attract the young people to remain there? Yes, Mr. Davis, I want that one question answered. That would furnish enough thought for an entire session. Can we build a rural America that will enable us to appeal to the best of our young people to stay there, enough of them? We can only keep one-half of our young people today, and so we have to raise twice as many people in the country as we can keep there. You cannot take this too seriously. Twenty-five years ago we were raising the finest stock—and when I say stock I do not mean cows or horses—but the finest human stock to be found in this country in the rural communities. Are we producing them today? That is the story of America. That is the story of all civilization. I am asking this question—Can the Farm Bureau assembled consider with us the ways and means whereby we can build such an economic rural life that will appeal to enough of the best of the young people to stay there, to go on producing the same stock? Or shall we continue to do with our people, our human stock, as we do with our cows and our horses and our swine? Sort out the best and send them to other markets and keep the poorest at home for our own consumption. All farmers do not do that, and the nation ought not to do that with its people. That is what I am trying to tell you.

I wish I had time to say a word about our Government. I am not talking about politics. I have no politics. I could not tell a Democrat from a Republican if I saw them coming down the room. If anyone thinks this problem is going to be solved by the politicians, just forget about that, there is not a hope that the political parties can solve it. They are bankrupt of the motives and the ideas now necessary to tackle the thing. It is organizations like yours that are going to do it, institutions like the Farm Bureau and the Grange now joining hands to tackle it.

I do not want to say anything about this administration. Believe me I could say it with the rest of you, but it is not necessary. I am reminded of the man who told me this story a little while ago when he had listened to a lot of nasty things about somebody, and he said, "Well, in the first place, perhaps he is not doing it." When the record of this administration has been written, it will be found that it has tried more than any former administration to meet the problem of rural life. Put that down when you think about that. A great deal of time has been spent on that.

Take this thought—when I said before the most important contribution that you country people have made to the cities is the young folks you have sent there—suppose we should charge those cities at the rate of $150.00 for each year for every child we have sent to the

city up until they were fifteen years of age—that is a fair rate. I wonder what you think the total amount would be for the children we have sent them, children that you country people have clothed and fed and educated for fifteen years. All the corn crop and all the cotton crop and half the wheat crop for a year would be needed to pay that bill. Put that down! If they lived to be as old as Methuselah they would never be able to discharge that debt to the country.

I am going further than that in dealing with this problem. I am talking about the importance of rural life in the building of civilization, dealing with that, I want again to emphasize the importance of the family life in the country. No nation can be stronger than its home life. As I have already pointed out, the average family in our cities has no home life. Usually there is the father and mother and two children, it is very seldom that they all get together, they see each other very seldom, and this fact more than anything else has contributed to the large divorce rate. There are about 75 percent more divorces per capita of the homes in the cities than there is in the country. Do you get my point? There is this to say about the hardship on the farm, the family stays together in spite of it rather than because of it. They may have a difficult time on the farm, but a man and his wife and children all work together to run that farm, it takes all of them working together to do it. In the final analysis you cannot measure the real value of the farm to Wall Street because it cannot be measured in dollars. The group you represent has more than any other group something of the elements of the Divine in it. If that were not true, I do not know that I would be here this afternoon talking to you.

I am talking about these values inherent in rural life without which there can be no civilization. Closely allied with rural life itself is the land, the source of revenue of rural life. You hear much of this matter of land conservation, soil erosion and so on. I hope that will keep on. There is a sacred value in the land, an element of ownership, of stewardship involved. You can measure the success of a nation in terms of what that nation has done to its lands. There is no escaping that. I say our heritage in the land has been cut down, it must be built up again. It has been wasted and now it will take millions to build it up. It has been exploited too long. I made that statement down in New Orleans and it took one man two weeks to wake up to what I said. I got a letter from a fellow in Washington. He took issue with me on that point that the farmers have to sell in one kind of a market and buy in another. I have written him a reply, when I talk about protection, I am not talking about tariffs, I am talking about the protection we need in our own land. Unless we can take care of that, we can not help the situation. Millions of our farmers were saved from starvation only by Government relief. This will finally impoverish the nation. That is not the solution. They want to work, they find joy in their work. They want it made possible so that they can work. Now, someone said it is difficult to find much solid value in milking cows, and producing cream to sell to produce oleomargarine to put on

your bread. That is not good economics. There is not much future in that. Someone says better than that we should have Communism like the Russian people. I can perfectly understand Communism. Oh, yes, I can. That is why I am talking like this to save this country from going Communistic. If we cannot do better than we have, then we might better become Communists. In my judgment, you should know the whole story. There is a great deal to be said of the better chance for the common people of Russia coming into their own in the system that has grown up in Russia today. Someone said they had destroyed the churches. God help us but it might have been the better solution. I am talking to you now as a minister of the gospel, and I am going to give you some facts about the situation in Russia, as to their attack on the churches. One of its own religious people has recently given this reason, when the church forgot the common people, the common people forgot their church. Yea, verily the same thing will happen here!

Let me take a minute and go into the situation in Russia, just why they pulled down their churches—eight hundred years they had those churches. I asked this question, I was trying to get from these common people the reason why they did that. I asked one man, "Why have you pulled down your church, tell me?" He said, pointing to the hallmarks of prosperity around him, "Oh, yes, I am having three square meals now. I am not eating black bread and sausage. either." Believe me that is the very argument he used. The people must have food, you cannot blame them. He said, "I am getting three square meals a day, not only do I get them, but I have servants to get them." "All right," I said, "go on, brother, tell me more." He said, "I never went to school. I am a man of sixty-five or seventy. My children never went to school, but my grandchildren are going to school." He pointed, "You see over there that school house, that building, that was built out of the bricks we pulled out of the church." Listen! If I were in a country that had had a church for eight hundred years, and in all those years was not sufficiently interested in the common people to give them a chance at education I would pull that church down, too. It would not be a Christian church, it might be something else, but not a Christian church. I said, "All right, go on." He said, "You see that little building? This is a collective farm, two thousand acres, with three types of collective farms. We Communists must raise own own food or we do not work."

(Applause)

That teaching was from Karl Marx, and also from another book—"they that will not work, neither shall they eat." That is Christian teaching.

Talking further to this man who has gone through the various stages of Bolshevism—"We have got a hospital now. We lived eighteen miles from the nearest town, we had no roads, never had a nurse or a doctor, never had a hospital." "What did you do when you were stick?" "We

got well or else died." Well, that was an easy way out. They have the hospital now and nurses to take care of them. If I lived in a country that had churches for eight hundred years and was not sufficiently interested in its people to get them doctors and nurses when they were sick, I would pull the churches down, too! It is cumbering the earth!

I will go a step further in Russia. Jesus died for Russia just as much as for America. I saw a little building that they called the "Crech." "What do you do with that?" "You see in Russia the women have always gone out to work on the farms, always worked with their men. They had to take their babies with them, and leave them in the sun in the summer time, in the winter without protection from the wintry blasts. Now they may leave them in the Crech in the morning, and they are fed and clothed and washed, put to sleep, and when the mother comes to pick the child up at four o'clock to take him home he is happy and contented." What have you to say about that? I can perfectly understand Communism, sure I can. I am anxious to protect this country against Communism. There is no need for America to have Communism. We have been rather free to condemn Russia but there would be no excuse for us though there is some for them. In our civilization I see no excuse for the problem of our sharecroppers, for our tobacco roads, not in America, the most efficient economic life in the world. We can, if we wish, correct all those things.

I am afraid my time is gone. I am like the preacher who hired a taxi driver to take him to a town to preach. The taxi man was to come for him and when he arrived he waited and waited, he sat around for an hour and a half. They said, "He got started, but he can't stop, he can't stop!" I am going to stop, but in stopping I want to say a word about this thought. The most important thing needed in America now is a new consciousness, is a new sense of values, is character, is Godliness, that will give us the strength to stand up. The most important thing is to help us to make decisions. Farmers need help to make their decisions. As I go around I find so many weak-kneed, wishy-washy people. Those words are not in the dictionary, but they are very good words. There were two men, old friends who had not seen each other for some time, one lived in New York and one in Chicago. One day they each made the decision to see the other. The New York man got on the train in New York, and the Chicago man got on a train in Chicago. Next morning these two trains met somewhere in Ohio. Each man got out of the train and was walking up the platform when they ran into each other. They became so interested in their conversation that when the train was called they both without thinking got on board the same train. Later in the day they were talking about what a wonderful world it had become, the things that had happened, and one of them said, "Here am I going to see you in New York and you coming to see me in Chicago and we are both on the same train." Well, there are a lot of farmers that are the same way, getting on a train and expecting to get over somewhere that you want to get to, but

you won't get there unless you decide about it yourself. I was talking about matters of government one time, talking without notes, and talking about statesmen and politicians in the same breath, and one man took me to task for that. He says, "What did you mean by talking about statesmen and politicians in the same breath? They are not the same." So I told him I thought a statesman was a man thinking about the next generation and a politician was a man thinking about the next election. I am not talking politics now, I am thinking about the next generation. You farmers should take your place in the business of government. Think about building the community in which you live. There is no community in the cities, and no hope for one in New York, none in Chicago. No hope at all. Why? Because there can never be communities in big cities. You have heard the story of a man going down to his home county down at Texarkana, could not find his place, and he stopped an old colored man. He said, "Sam, what community is this?" "Boss, what dat you say?" "What community is this?" "Community, Boss, what am a community?" "Well, a community is where people work together, where they play together, where they live together." "Wal'," he says, "this ain't a community, this am jes' a place." I would like to stand here for hours and plead for the rebuilding of the community spirit in rural America, but I cannot. We need it in order to save democracy.

Then, I come back to the rural church. You can make a tremendous contribution there. You hear these complaints—"I have no use for the church. They are always after money. The church in our community is not any good." Why is it no good? Have you done anything for it? If you have not done anything for it, then it is your fault that it is not any good. You should get in it and make it what you think it should be. Perhaps you do not care for the preacher, you think he is not the right man for the place. Then get busy and get a good man for the place. It is in the hands of you people, and the church is needed to make that possible—the rural church must become a community institution. So many of our churches are denominational. The kind of religion I have been speaking of often exists in spite of the church. The Protestant churches should find a way to unite their efforts to conserve the community basis for democracy, to conserve it.

Now, I have this closing thought and I am absolutely through. That is, I think I am going to close. Don't look so pessimistic. After all, this question is in your hands, don't depend on somebody else to do this job. That reminds me of a colored man and his girl who were going down the road, and they were getting quite sentimental in the moonlight. Finally the man stopped and he said, looking into her eyes: "Milly, I wish I was a octopus." She says, "Whar am dat?" "Don't you know what a octopus is?" "No, what am a octopus?" "Wal, a octopus am a great big animal that has got eight arms." "Whar for you want to be a octopus with eight arms?" "I love you so much I want eight arms to put around you." "Wal'," she says, "Yo' has got two arms now and you ain't doing a thing with them." You have already

got your two arms. Are you using them to the glory of God to the building of the rural life and the Christian civilization?

MR. ETZLER: I surely wish to thank the Doctor for the wonderful message he has brought us.

After some announcements, the meeting adjourned.

FRIDAY, JANUARY 13

9:30 A. M.

MR. NUTTLE: First we will have the roll call of the voting delegates by the Chairman of the Credentials Committee, Mr. Wilbert Smith.

Mr. Smith called the roll as requested.

ROLL CALL—FARM BUREAU MEETING OF DELEGATES

Allegany—R. C. Wilson, Le Roy Frazee; *Anne Arundel*—Oscar Grimes, Hall Worthington, Roland Leitch, E. P. Jones; *Baltimore*—P. C. Turner, F. Ridgely Todd, T. S. Sherrill, T. A. Mann, Joshua Lynch, T. B. Todd, Jr., W. T. Allen, J. M. Hoshall; *Calvert*—J. Ellis Bowen, Calvert C. Buckler, A. Orville Drury; *Caroline*—Richard Blackburn, Kennard Shultz, W. M. Garey, M. C. Voss, Clayton Roe, H. C. Harrington, F. H. Doerr, E. H. E. Thieroff, Nicholas Laigneil; *Carroll*—John S. Bushey, Edwin Englar, Danton Ensor, C. Jesse Hull, George C. Brown; *Cecil*—D. B. McDowell, Sam Caldwell; *Charles*—S. C. Linton, Omar Jones, W. Ralph Gardiner, Bergen Brown, F. B. Bolton, Margaret Brown; *Dorchester*—A. K. Austin, Donald E. Wheatley, Reginald A. Jones; *Frederick*—Alvie M. Etzler, B. B. Rosenstock, Roy Fisher, Henry Stottlemeyer, Harvey R. Cramer, E. D. Peters, Walter L. Zimmerman, P. D. Koons, W. E. Burall, Frank A. Gardner, J. W. H. McGaha, Harry U. Leatherman, Cecil K. Holter, D. S. Guyton; *Garrett*—William Winterberg, R. O. McCullough; *Harford*—T. R. Brookes, Dr. Herbert Hoopes, A. G. Ensor, Hugh B. Bailey, Gladden Davis, G. Arthur Jackson, S. H. Anderson, Wilson Heaps; *Howard*—Roby H. Mullinix, J. Frank Curtis, J. Wilson Lord; *Kent*—H. S. Leaverton, L. A. Sutton, Harry T. Williams, Harper R. Carter; *Montgomery*—J. W. Jones, James D. King, Granville Thompson, Ulysses Griffith, 4th, Osman Stapler; *Prince Georges*—W. R. C. Connick, Guy H. Claggett, H. L. Townsend, J. E. Hogue, Cleveland Duley, H. A. Hungerford, C. W. Brown, Jos. H. Blandford, William E. Duvall; *Queen Annes*—John W. Smith, John R. Whaley, Jr., Noah Skinner, Charles I. Boyle; *St. Marys*—Grenville Lewis, Jos. F. Crew, Frank Hayden; *Somerset*—William T. Chaffey, W. C. Hoffman, Miles Lankford, Harry Keenan; *Talbot*—F. G. Shillinger, James Stewart, Claude Sewell; *Washington*—R. C. F. Weagley, Reginald S. Ankeney, D. Eldred Rinehart, George B. Downey, William H. Hovermale; *Wicomico*—Claude C. Phillips, Jay Farlow, George O. Collines, Robert Williams, John Parker, E. O. Cooper; *Worcester*—W. H. Holloway, R. Newell Stagg; *Maryland State Beekeepers' Association*—Dr. E. N. Cory, Dr. J. R. Abercrombie; *Maryland Crop*

Improvement Association—Lawrence E. Ensor; *Hillsboro-Queen Anne Cooperative Corp.*—Charles I. Boyle, Wilson Heaps; *Maryland Horse Breeders' Association, Inc.*—Major G. L. Stryker; *Maryland State Horticultural Society*—G. Rust Canby, H. C. Whiteford, J. A. Cohill; *Maryland Cooperative Milk Producers, Inc.*—R. W. Shermantine, Wilson A. Heaps, George B. Kelly, P. W. McKay; *Maryland State Poultry Council*—J. W. Snoddy, Mrs. W. W. Hopkins, A. R. Peterson; *Stockmen's Association*—R. C. F. Weagley; *Maryland Tobacco Growers' Association*—Nelson Turner, Oden Sansbury, S. C. Linton; *Maryland Vegetable Growers' Association*—F. Ridgely Todd, H. T. Merritt; *Associated Women of Maryland*—Mrs. Edwin D. Fry, Mrs. Harry L. Davis, Mrs. Randall Spoerlein, Mrs. P. D. Brown, Mrs. Atlee Armour, Mrs. Richard Blackburn, Mrs. Winifred Adkins.

Mr. Wise presented the call to the meeting and also the minutes of the previous meeting.

December 22, 1938.

To County Secretaries and
Affiliate and Associate Secretaries

NOTICE OF ANNUAL MEETING OF MEMBERS OF MARYLAND FARM BUREAU, INC.

Dear Sir:

Official notice is hereby given you that the Board of Directors of the Maryland Farm Bureau, Inc., has authorized the calling of the next annual meeting of the Corporation for January 12 and 13, 1939, Lord Baltimore Hotel, Baltimore, Maryland; the meeting to continue from day to day until all business that may come before the meeting has been properly disposed of. All sessions of the annual meeting will be held in the Ballroom of the Lord Baltimore Hotel.

We quote the following from By-Laws of Maryland Farm Bureau, Inc.: Article 11 (By-Laws Maryland Farm Bureau, Inc.) Representatives at Annual or Special Convention.

Section 1. *Delegates:* Each member in good standing shall, in addition to its duly authorized directors, be entitled to one voting delegate for every fifty (50) members, in good standing, or multiple thereof, based on the official records of the Corporation as of December 31 preceding, to represent said member at any annual or special meeting of this Corporation.

Each associate or affiliate member in good standing in this Corporation shall be entitled to two delegates for each five hundred (500) members or multiple thereof; but in no case shall it be entitled to more than three (3) such delegates, this representation shall be based on membership actually paying annual dues into the treasury or based on contracts with said associate member.

Said delegates shall be actually engaged in farming and duly selected and designated by their respective organizations. In no case shall a county agent be selected as a delegate.

Blanks have been sent you for you to submit the credentials of your directors and delegates for this meeting.

Very truly yours,

C. E. WISE, JR.,
Secretary-Treasurer,
Maryland Farm Bureau, Inc.

CEW.EM.

MR. NUTTLE: Are there any corrections to the minutes? If not, they will stand approved as read.

One item of business must be attended to before we can seat these voting delegates. I will ask Mr. Connick, a member of the Committee on By-Laws to read the Committee's report.

MR. CONNICK: You know we have an organization of the ladies, and they have a Constitution, and now in order that it become effective in the Farm Bureau, we must modify our Constitution, and it will be necessary to make the following changes. The first amendment is:

"*Amendment No. 1*—Section 1, Article III, page 6, strike out the entire section and insert in lieu thereof the following:

Section 1. The Board of Directors shall consist of one director nominated by each member having a membership of from fifty (50) to five hundred (500) and one additional director for each additional five hundred (500) of paid-up memberships, or major portion thereof, based on the official records of the Corporation. The President and Secretary of the Associated Women of the Maryland Farm Bureau and the Maryland member of the Board of Directors of the A. F. B. F. shall be ex-officio directors of this Corporation. Past Presidents of this Corporation shall be members of the Board of Directors for 5 years after expiration of their terms of office. In no case shall a county agent or home demonstration agent be eligible as a director."

Mr. Chairman, I move the adoption of this amendment.

Mr. Sam Linton, of Charles County, seconded the motion and it was duly carried.

"*Amendment No. 2*—In Section 3, Article III, page 7, strike out entire section and insert in lieu thereof the following:

Section 3. The President and Director of the Extension Service of the University of Maryland, the Executive Committee of the Associated Women of the Maryland Farm Bureau

and one representative of each associate or affiliate member shall have the privilege of attending all meetings of the Board of Directors as advisory director and the right to take part in discussions, but shall have no vote."

Mr. Chairman, I move the adoption of this Amendment.
Mr. Bolton, of Charles County, seconded the motion, and it was duly carried.

"*Amendment No. 3*—In Section 8, Article III, pages 7 and 8, strike out the words Vice-President and the chairman of the Home and Community Committee and insert in lieu thereof the following:

'Vice-Presidents and the President of the Associated Women of the Maryland Farm Bureau'."

Mr. Chairman, I move the adoption of this Amendment.
Mr. Blandford, of Prince Georges County, seconded the motion and it was duly carried.

"*Amendment No. 4*—In Section 9, Article III, page 8, strike out entire section and insert in lieu thereof the following:

The Associated Women of the Maryland Farm Bureau shall consist of the women of Farm Bureau families as provided for in the By-Laws adopted by their county representatives and approved by the Executive Committee of the Maryland Farm Bureau, Inc."

Mr. Chairman, I move the adoption of this Amendment.
Mr. Grimes, of Anne Arundel County, seconded the motion, and it was duly carried.

"*Amendment No. 5*—Section 4, Article 1, on page 4, line 10, after the words 'American Farm Bureau Federation' add the following:

Ten cents (10c) shall be for one year's dues to the Associated Women of the Maryland Farm Bureau."

Mr. Chairman, I move the adoption of this Amendment.
Mr. Roy Weagley, seconded the motion and it was carried.

"*Amendment No. 6*—Section 1, Article II, page 5, after the word 'Corporation' in line 7, add the following:

The Associated Women of the Maryland Farm Bureau shall be entitled to five (5) voting delegates to represent them at any annual or special meeting of this corporation."

Mr. Chairman, I move the adoption of this amendment.

Mr. King, of Montgomery County, seconded the motion, and it was duly carried.

Mr. Nuttle explained that Amendment No. 1 puts on the Board of Directors the Secretary of the Women's organization. Amendment No. 2 enables the Executive Committee of the women to attend Directors' meetings of the Farm Bureau without vote; Amendment No. 3 is to incorporate in that section the Vice-President and the President of the Associated Women of the Maryland Farm Bureau; Amendment No. 4 merely defines the Association; Amendment No. 5 is intended to give the women some working capital; $1.40 is for the Maryland Farm Bureau and ten cents for the women; Amendment No. 6 means just what it says and those women are entitled to their seats at this time.

MR. NUTTLE: It looks as if these by-laws will have to be revised and reprinted. We will now have the Treasurer's report.

Mr. Wise presented the Treasurer's report.

MR. NUTTLE: Are there any questions in connection with the Treasurer's report?

Mr. Sam Linton moved that the Treasurer's report be accepted as read. Mr. Connick seconded the motion and it was carried.

MR. NUTTLE: We will now have the Audit Committee's report, Mr. J. W. Jones, Chairman.

MR. JONES: It has usually been the custom to have the Auditor present so that he might answer questions. It was not possible for him to be here this morning, but I am sure he will be glad to answer any questions if we cannot find the answer here.

AUDITING COMMITTEE

January 10, 1939

Your committee appointed by the President to examine the annual audit of the Treasurer's accounts, submits the following report:

We have gone over the annual financial report very carefully, and find the report shows the assets of the Corporation have increased from $19,246.12 in 1937 to $19,966.74 in 1938, an increase of $720.62, which is very gratifying.

The Accounts Receivable are in excellent condition.

All bills due by the Corporation have been paid in full to December 31, 1938.

We wish to express our appreciation of the way the office is run and the completeness in which the records are kept.

Respectfully submitted,

J. W. JONES, *Chairman*
ELLIS BOWEN
T. ROY BROOKES
A. K. AUSTIN
HOWARD LEAVERTON
RICHARD BLACKBURN

DR. SYMONS: Mr. Chairman, I move that the report be accepted with thanks to the Committee.

MR. ROSENSTOCK: Do I hear a motion from a non-voting member?

MR. NUTTLE: I expect the point is well taken. We have always been glad to welcome any suggestion by Dr. Symons, but when the point is taken the Chair will have to rule against Dr. Symons making the motion.

Mr. Jones moved the report be accepted; Mr. Rosenstock seconded the motion, and it was carried.

MR. NUTTLE: I think there should be some way that we could approve this report, this financial statement. I guess the report carries with it the approval of the financial statement.

DR. SYMONS: May I ask what the discussion was about?

MR. NUTTLE: He raised the point that you as a non-voting member should not make that motion, and I had to rule on it.

DR. SYMONS: Do I have the privilege of the floor?

MR. NUTTLE: I think so.

DR. SYMONS: Then I wish to suggest that we express our appreciation to the treasurer for the analysis he presented to the group.

MR. NUTTLE: I am sure we can accept that. I wish my own financial condition for the year was as good.

MR. THIEROFF: Since the point has been raised, I would like to know if a member has a right to say anything in this meeting?

MR. NUTTLE: I think we can permit any member of the Farm Bureau to take the floor unless we find it is holding the meeting up too long. Of course, that is up to the voting delegates alone, but that is my opinion. We will now have the report of the Tax Committee, Mr. R. C. F. Weagley, Chairman.

MR. WEAGLEY: I have here before me this report of the Joint Tax Committee of the Maryland State Grange and the Maryland Farm Bureau Federation. You all have copies of it. It contains 44 pages. It is the desire of the Committee that you either read it or have it read to you. I would rather concentrate and read the summary and let you read it yourself back home in the next ten days. I hope you will cooperate with me in that. These taxes are being discussed everywhere you go now. If you pick up the newspapers you find the matter in all the papers, and last night the representative of the Governor at the banquet, Mr. Gontrum, gave us an invitation to cooperate and help him. That was not commented on by our presiding officer, but it was picked up by the next speaker who was present, Curly Byrd—we don't call him Professor or Doctor, but just Curly. I just mention that to show that Curly never misses a trick, and for that reason he was able to advance himself from athletic coach to President of the University. Most of the speakers at the banquet had something to say about taxes. I do not think the farm people object so much to paying taxes, but they want something to say about how the tax money is spent.

Now I am going to try to read this summary on page 29.

(Tax report printed in full following record of meeting.)

MR. ROSENSTOCK: I move that the Committee be praised for the great efforts expended in drawing up such a report, and that the report be filed. The reason I do not move that it be accepted is that Frederick County would like to make some amendments to it.

MR. J. M. HOSCHILD, of Baltimore County: About that referendum on the graduated income tax coming up in the election of 1940. There is no State election that year, only for the President. I suggest that that be changed to 1942.

MR. NUTTLE: I do not know whether it will be put on the ticket or not.

MR. ROSENSTOCK: We could have a special State election without much additional cost.

MR. CONNICK: I move that the report be accepted.

Mr. Blandford seconded the motion.

MR. ROSENSTOCK: Mr. Chairman, on behalf of Frederick County we would like to amend Section 4 of the Summary.

MR. CONNICK: What about my motion?

MR. NUTTLE: I rule that it can be amended if we want to amend it.

MR. ROSENSTOCK: Fellow members, there is a phrase used in the summary of this report by our Joint Tax Commission that raises some question with our local people. I do not know whether you have given it any thought or not. I am talking about Section 4 on pages 29-30. We recommend (Reading long recommendation which was not handed in.) Now, as we understand it, if the gas tax is not diverted, which we hope it will not be, and we have the moral support of the last Legislature that it would not be, there will be much additional revenue that in our opinion in Frederick County, as much as at least $50,000 could be given to each of the Counties of the State to assist in our dirt road programs without affecting in any manner the maintenance or construction of other roads and streets. Therefore, we feel that the matching by local tax levies will be unnecessary if the gas tax is not diverted as it should not be. We could easily have $50,000 for the maintenance of our dirt roads.

Then, coming down to Section 6 (a), we are heartily in favor, as you recommend, of the placing of an income tax as part of the tax system in Maryland. However, we are utterly opposed to any income tax that is not in lieu of the general property tax. We are not in favor of a new source of further taxes for the purpose of being spent by the politician. We are for it if it is a new tax in order to relieve us from the burden of the general property tax. We are utterly opposed to raising new money just for the politicians to spend, but if it is going to lower the general property tax we are for it. We go even further with that tax and say it should be ear-marked for the purpose of State education. We recommend that for the following reasons—our local communities no longer have control of our school systems. The school system today is run by the State group. Therefore, we think the State should carry the burden of education; for that reason we say the State income tax should be ear-marked for education. Nobody says

how much money shall be spent for education, and without education our democracy cannot exist, and, therefore, we do say the income tax should properly be used for education. Now, in order to bring about the proper legislation, we suggest that the income tax, whatever the amount, 2½% if it is necessary to have that much to carry on the schools, but we should take the school tax out of the general property tax, and use that income tax and place our schools on a sound basis for the education of our children. We suggest that the present law be amended so the 40% of your dollar levy can be used for education instead of the 47% as at present. You will remember when Governor Ritchie set that at 47c what a burden was taken off of you. Now, with the use of the income tax, you can drop that down from 47c to 40c and still have ample funds to carry on the schools.

Now, your present tax rate is 45 mills, 15 to the State and 30 to the Counties. The Committee uses the general word "intangibles." Would intangibles include mortgages and notes? Do you want to get back to taxing mortgages again?

MR. WEAGLEY: Can you clear all that up a little?

MR. ROSENSTOCK: I don't know that I can. I don't think so.

MR. NUTTLE: My impression is that within the State that should be exempted as formerly.

MR. ROSENSTOCK: If that be so, and you want to continue the present system, we are rather at a loss to understand this suggestion. We are wondering what the theory was.

MR. TURNER: I think we had better talk to Mr. Walker and ask him to come over here. He said it would be impossible for him to come, but perhaps he would come if we needed him.

MR. ROSENSTOCK: We just want a little clarification at this time. We would like to offer at this time for your consideration the following recommendations with regard to Relief. We know that we have Relief with us, whether we like it or not. We further should know that sooner or later Relief will be dumped into our local laps, and the Federal Government will wash its hands of it. The question before us always is how to take care of Relief, using, of course, the greatest economy in the administration of the same. We feel, and we have always felt in Frederick County, that what we really need is a sales tax. We tried that with the last Legislature and we did not succeed. We would like to suggest the idea of introducing in Maryland what we have not had but what over 25 other States have had. We feel that if you had a two cents tax on the dollar for a retail sales tax that you would accomplish what we want to do.

MR. TURNER: I want to suggest this. We have prepared a resolution on this question of relief. Would you be willing to defer this question until after we have gone over the resolutions? I believe we would get somewhere if we did that.

MR. ROSENSTOCK: We would be willing to do that.

MR. NUTTLE: I think it would be well to defer action on that until we see what the resolutions provide for.

MR. ROSENSTOCK: Fellow members, then so we won't have to really close this discussion on the sales tax, we will first hear the resolutions.

MR. NUTTLE: Do you make a motion to defer action on the Tax Committee's report until we have considered the resolutions and let the Tax Committee matter come up later?

Mr. F. G. Shillinger made the motion and it was seconded and carried.

MR. NUTTLE: We will now have the report of the Resolutions Committee, Mr. P. C. Turner, Chairman.

MR. TURNER: I want to take this opportunity to thank the Committee for their cooperation, and I want to say that we considered all the resolutions submitted very carefully, and a lot were thrown out of the window, and a lot amended. Another thing, Frederick County sent in more resolutions than any other County, and that shows that they are on the job.

Mr. Turner then read Resolution 1 on the prepared list and moved its adoption. Mr. Koons seconded the motion and it was carried.

Resolution No. 2 was read, and seconded by Mr. Chaffee and carried.

Resolution No. 3 was read, and seconded by Mr. Connick and carried.

Resolution No. 4 was read, and seconded by Mr. Hall, of Anne Arundel County, and carried.

Resolution No. 5 was read, and Mr. Turner moved its adoption.

MR. CONNICK: Would it not be well to postpone action on this until we get through the others?

MR. ROSENSTOCK: The only thing about that is that we all look up to Dr. Walker, but if he cannot be here, are we going to lay it over?

Mr. A. G. Ensor seconded the motion to adopt.

MR. TURNER: I think I have got more nerve than I ever had to get up here and try to talk against a lawyer, but I am going to try to do it anyway. The thing Mr. Rosenstock is advocating is a decrease in the general property tax. Most of us want to see the State real estate tax wiped out in the course of time, but we must remember that it is essential for Relief now. That is $11,895,000. We also know that the total running of this Government is $35,891,000. The feeling of the Committee is that if we could hold our own and not have an increase on real estate tax, we could not expect much more. We all want that. It has been presented by Mr. Walker that these tax rates recommended would meet the situation we have in the State of Maryland. Now, then, you are advocating a sales tax. Maryland is a long State with a long border line, and the only State that touches Maryland that has a sales tax is West Virginia, all the other States have none. If we have a sales tax, every man who wanted to buy an automobile would go over the line and buy it and that would ruin our manufacturers. We do not believe that now is the time to advocate a sales tax.

MR. THIEROFF: You know none of us like to pay taxes, but we know we have to pay them. This sales tax proposition is a subject that nobody likes to hear about. The point that Mr. Turner made about a man going across the State line is a good point. I tried to

talk to some people along a different line. If we had a National sales tax on certain products that would probably come nearer to solving this question.

MR. NUTTLE: It seems to me the question now is whether we want to talk about this now or wait until we can ask Mr. Walker?

Mr. Thieroff made a motion that the discussion on Resolution No. 5 be deferred, and Mr. J. W. Jones seconded it and the motion was carried.

Mr. Turner then read Resolution No. 6 and moved its adoption. Mr. Roy Brookes, of Harford County, seconded the motion and it was carried.

Mr. Turner read Resolution No. 6A, and moved its adoption. Mr. Burall, of Frederick County, seconded the motion and it was carried.

Mr. Turner read Resolution No. 7 and moved its adoption. Mr. Koons seconded the motion.

MR. ROSENSTOCK: I think we should add a sentence to that to the effect that we recommend that all land used for forestry reserve be exempted from taxation until the harvesting of the crop.

MR. THIEROFF: I think we ought to limit the time of the harvesting.

MR. HOLLOWAY: What would be the amount of the tax and the time?

MR. ROSENSTOCK: That would be rather indefinite—enough to pay for the proper use of the land. We feel that it could be worked. We want to encourage people in re-foresting areas in Maryland, and there is only one way to do it. It might be 30 or 40 years—the time when you can sell your timber—but we could leave that up to the Tax Commission. It is the theory we are interested in.

MR. HOLLOWAY: Then, the final tax would be the equivalent of the taxes during all those years. It would be just a case of paying all at one time rather than year by year.

MR. STABLER, of Montgomery County: I do happen to know that the State of Alabama and some of the Southern States have this kind of property tax. It is known as the Severance Tax. It is in operation in some of the Southern States.

MR. WISE: About two years ago New York enacted a law taking a big area of land out of production in this way and it has been working very well.

MR. NUTTLE: I suggest that we can accomplish this by letting the Board of Directors pass on corrections of the bill and then we can get away from these minor corrections. The question is whether we want to give an opportunity of planting trees and have them exempted from taxation.

This was carried.

Mr. Turner read Resolution No. 8 and moved its adoption. Mr. Healey seconded the motion.

MR. MCDOWELL: How many Counties matched that appropriation?

MR. NUTTLE: They went around and I think almost every County in the State contributed. I do not know how much. I know Cecil County put up that money. I am pretty sure all of the Counties did.

DR. SYMONS: Eighteen counties contributed out of their local funds.

MR. TURNER: I know Baltimore County put up some of it.

Resolution No. 8 was adopted.

Mr. Turner read Resolution No. 9 and moved its adoption. Mr. Koons, of Frederick County, asked that the word "only" be inserted in the third line between "match" and "State." Mr. Turner accepted the amendment and resolution was so passed.

Mr. Turner read Resolution No. 10 and moved its adoption. Mr. Boyle seconded the motion.

MR. ROSENSTOCK: We move the amendment of Resolution No. 10 by striking therefrom the third and last sentence which means nothing but a lot of beautiful words. We oppose competition between cooperatives, because it is a duplication of effort at the expense of the farmers.

MR. ENSOR: Which cooperatives would you keep?

MR. ROSENSTOCK: The Farm Bureau.

MR. ENSOR: There may be other good cooperatives?

MR. ROSENSTOCK: Who is to say under the present conditions?

MR. ENSOR: Your amendment would say there must be one cooperative, and that a group of farmers—your resolution could not be put in force.

MR. ROSENSTOCK: We do not want competition between farmers.

MR. ENSOR: There is no way of stopping it. That amendment is something that will cause you considerable criticism if it is adopted.

MRS. WILLIAMS: Maybe if you had a little competition among your cooperatives it might be a good thing and would give us better cooperatives.

MR. HOGUE: It seems to me with this amendment, whatever cooperative was chosen, there could not be any other?

MR. ROSENSTOCK: The question is this, do we as farmers believe in working together for our own interest, opposing those who believe in the individual form of doing business. Most of us think we would rather work through the system of helping ourselves rather than deal with stock companies. That has been our theory in cooperatives. Now, do we believe in farmers fighting one another in competition? It is a matter of principle whether we favor competition between farm organization, or don't we? If we believe in competition, all well and good, then say so. If we believe in no competition, let's say so.

MR. LEWIS: The question just brought up brings to my mind a feeling that I have gotten about all cooperatives. They like to have the inside edge, they should thrive under competition, and I say that for fair dealing the best results should be attained under competition. If a cooperative cannot operate against fair competition, then it has got no business to operate. The minute you destroy fair competition, then you are going to destroy paying businesses.

MR. ROSENSTOCK: We are not so much interested in whether the Companies pay dividends, it is rather a matter of principle, and we would like to amend by striking out that last sentence.

A vote was taken that was close, and so a division was called, and the vote carefully counted, whereupon it was found that the amendment was lost.

MR. NUTTLE: The question arises on the adoption of the original resolution as read. The resolution as read was carried without amendments.

Mr. Turner read Resolution No. 11, and moved its adoption. Mrs. Hopkins, of Talbot, seconded the motion and it was carried.

Mr. Turner read Resolution No. 12, and moved its adoption. Mr. Haman, of Somerset, seconded the motion, and it was carried.

Mr. Turner read Resolution No. 13, and moved its adoption.

Mr. Connick asked if that were compulsory.

MR. TURNER: I would say that 40 farm families made up our group, and several people have been to the hospital and have had care without extra cost.

Mrs. Weagley seconded the motion and it was carried.

Mr. Bolton, of Charles County, asked for figures, and he was given information; $18.00 a year for individuals and $24.00 for man and wife.

MR. BOLTON: I just had some doubt as to how to proceed on this matter.

MR. TURNER: I will put you in touch with the proper people. I think you are allowed 21 days for hospitalization at $5.00 a day, and $5.00 for operating room. They will tell you about it.

MR. NUTTLE: That does not include doctors and care outside the hospital. It is only for hospitalization.

Mr. Turner read Resolution No. 14, and moved its adoption. Dr. Symons called attention to the fact that the first two words in the heading should be transposed so as to read "ANIMAL MEAT IMPORTATION." Mr. King seconded the motion and it was carried.

Mr. Turner read Resolution No. 15, and moved its adoption. Mr. Holter, of Frederick County, seconded the motion and it was carried.

Mr. Turner read Resolution No. 16, and moved its adoption. Mr. Griffith, of Montgomery County, seconded the motion and it was carried.

Mr. Turner read Resolution No. 17, and moved its adoption. Mr. Koons, of Frederick County, seconded the motion and it was carried.

Mr. Turner read Resolution No. 18, and moved its adoption. Mr. Thieroff seconded the motion.

MR. ROSENSTOCK: I would like to offer an amendment to strike out the last three words of No. 2. We are not particularly interested in having a lot of contractors on our State Roads Commission.

Mr. Connick seconded the motion and it was carried.

MR. ROSENSTOCK: We would like to amend that Resolution further by combining sections 4 and 6. They deal with the same thing. If the County roads are returned to the various Counties, that could not be done unless 2c of the gasoline tax be appropriated for the use of those Counties. Our reason for saying 2c rather than a cent and a half is that we want to construct and maintain our farm-to-market roads,

and we might as well ask for the 2c whether we get it or not, but we can ask for it. As it has been in the past with the State keeping the roads, the County Commissioners had little to do with it. We are suggesting if the roads should stay with the State that your local Boards of County Commissioners ask the right to say what roads are to be fixed and the amount of money to be used.

MR. NUTTLE: Do you want to strike out sections 4 and 6?

MR. ROSENSTOCK: No, we would like them combined as one section. They cover the same thought.

MR. NUTTLE: Don't you think it would be better to make a new 6?

MR. ENSOR: As I understand it, you are asking that the one and one-half cent gas tax be re-enacted. 4 and 6 are two different questions. Is that your understanding? It seems to me that you are trying to incorporate a law and at the same time trying to re-enact a law, the same law. Don't you think you had better consider that?

MR. ROSENSTOCK: What we are asking is for 2c for gas tax be appropriated. Add the word "re-enacted and appropriated."

MR. NUTTLE: I think you had better let 4 go in and change 6.

MR. ROSENSTOCK: No, we do not want the County roads returned unless we get the appropriation. We don't want them dumped back in our laps without an appropriation.

MR. TURNER: Baltimore County kept its roads, and we are not sorry that they were not taken away from us. We are asking for the re-enactment of this one and one-half cent gas tax. It is not fair that our State roads are in a terrible condition now. Do you think it quite fair that we ask for 2c? I do not. It will take an awful lot of money to fix the roads at this time, and if we ask more than that one and a half cent rate I do not think we would get it. I want to see the farm-to-market roads fixed, put in good shape at this time, but until the State roads are in good shape I do not think we can hope for much on the farm-to-market roads.

MR. BOLTON: I want to suggest that if this amendment is recommended, that you include Charles County. We would like the County Commissioners to have the right to say where the County roads shall be built.

MR. ROSENSTOCK: We would have at least $50,000 for each County to be used on your roads, could be used on dirt roads, and not affect the State program. I would like to suggest that in lieu of 4 and 6.

MR. NUTTLE: The question is whether a lump sum diverted like that could be used on dirt roads.

MR. ENSOR: It is a question whether in other Counties they want to oppose that one and a half cent rate. It seems to me one of the most serious things to take care of is the grade crossings. It seems to me that this organization does not want to go on record as opposing that. Did not Frederick County have one of those terrible accidents at grade crossing? I do not think we want to go on record not to use that money for the elimination of grade crossings.

MR. ROSENSTOCK: In order to shorten this discussion, Frederick County is willing to take one and a half cent instead of 2c.

MR. TURNER: I think it would be fine if we would go on record that this diverting of these funds be stopped and that that one-half cent be put on grade crossings and keep the one and a half cent.

MR. NUTTLE: Suppose we add to that 4 as follows: "Allow any County that so desires to take over its County roads, provided the one and a half cent of gas tax be turned over to the County for use and maintenance of County roads."

MR. ROSENSTOCK: We do not want them dumping those roads in our laps without some of the tax.

MR. ENSOR: What would stop them from dumping them?

MR. ROSENSTOCK: The Farm Bureau could. The only way is for the Farm Bureau to take positive action. We represent the control in the Legislature if we stick together. If we do not stick together we defeat ourselves, we are licked. The members of the Farm Bureau speak for the rural interest, and we should put over our own program.

MR. ENSOR: Well, we want the one and a half cent tax. I do not know about turning the roads over to the Counties. Many of the Counties want the roads, but some do not.

MR. NUTTLE: Well, that provided that the gas tax, one and a half cents, goes to the County where the roads are turned back.

COUNTY COMMISSIONER FROM PRINCE GEORGES: I would like to clear this up by suggesting this. Suppose we have Section 4 read that we allow every County that so desires to take over its County roads and receive an appropriation of part of the one and a half cent gas tax.

MR. ROSENSTOCK: We will accept that amendment in place of what we made. We will withdraw the other amendment.

Resolution 18 was passed as amended.

Mr. Turner read Resolution No. 19, and moved its adoption. (N. B. the word "feet" was an evident error and was changed to "post" in the middle of the third line). Mrs. Hopkins seconded the motion.

MR. KOONS: Should not dairy products be included in that?

MR. NUTTLE: It was thought best to have this resolution only for the canneries. Several places on the Eastern Shore are not responsible and they owe the farmers thousands of dollars which they have to settle at one-third. The responsible canners would like to have this resolution to protect the farmers as well as themselves.

MRS. HOPKINS: We have one man who took over the farm of his father and through the operation of one of these irresponsible canners he lost $1,100 and does not think he can get it back.

MR. KOONS: We have irresponsible buyers of milk in Frederick County, some of them as much as three months back in their payment. Frederick County would like to add dairy products to that.

MR. MANN: I object to that, because it would weaken our Dairy Association. If they were in the Dairy Association you would have some protection. That would weaken the Dairy Association.

MR. BURALL: I heartily approve of that.

MR. TURNER: I think the Dairy Association does require a bond.

DR. SYMONS: I think that should be incorporated in another resolution. It would involve Commission merchants or any other business of the kind. It should be in another resolution.

MR. NUTTLE: If Mr. Koons will prepare another resolution on that we will submit it later.

Mr. Turner read Resolution No. 20, and moved its adoption. Mr. Lewis seconded the motion and it was carried.

Mr. Turner read Resolution No. 21, and moved its adoption. Mr. Sam Linton seconded the motion, and it was passed.

MEMBER: The Farm Bureaus of the five Southern Counties some time ago appointed a Committee to investigate and make some suggestions in regard to this and as a result of that Mr. Lewis, of St. Mary's County, Chairman of that Committee, made certain definite suggestions and resolutions were drafted for a bill to be submitted to the Legislature. I do not know whether this will interest you enough for me to go into detail, but I will say that practically every farmer down there is in favor of that.

Mr. Turner read Resolution No. 22, and moved its adoption. Mr. Phillips, of Wicomico County, seconded the motion. Dr. Symons called attention to an error in the third line, whereby the words "State and" before "County Farm Bureau" should be stricken out, and the Resolution as so amended was passed.

Mr. Turner read Resolution No. 23, and moved its adoption. Mr. Blandford, of Somerset County, seconded the motion and it was carried.

Mr. Turner read Resolution No. 24, and moved its adoption. Mr. Langlien seconded the motion, and it was carried.

Mr. Turner read Resolution No. 25, and moved its adoption. Mr Holter, of Frederick County, seconded the motion and it was carried.

Mr. Turner read Resolution No. 26, and moved its adoption. Mr. Chaffee, of Somerset County, seconded the motion and it was carried.

Mr. Turner read Resolution No. 27, and moved its adoption. It was called to the attention of the chairman that the word "appreciation" in the fourth line should read "appropriation."

MR. CONNICK: I would like that changed to include in the list of Agricultural Agencies, an appropriation of at least $10,000 for investigating and trying to secure a control of the Tobacco Plant Bed Disease. That has been threatening the tobacco growers, and has cost them hundreds of thousands of dollars in the last three or four years. Tobacco was the first crop to be raised in Maryland. Tobacco was raised down there before the first cow ever came to Southern Maryland, and we are lined up as a unit for this. Do you remember that exhibit we had there. I hope some of you saw it.

Mr. Grimes seconded the amendment.

MR. NUTTLE: Mr. Connick offers that as an amendment and it is seconded by Mr. Grimes. What is your pleasure?

MR. LEWIS, of St. Mary's: Mr. Connick has not mentioned the fact

that this work has been carried on for some time and a lot of work has been done.

MR. NUTTLE: The resolution will carry now the addition of $10,000 for investigation and control of the tobacco disease.

The resolution was passed as amended.

Mr. Turner read Resolution No. 28, and moved its adoption. Mr. Bolton, of Charles County, seconded the motion, and it was carried.

Mr. Turner read Resolution No. 29, and moved its adoption. Mr. Rieck, of Charles County, seconded the motion and it was carried.

Mr. Turner read Resolution No. 30, and moved its adoption. Mr. Bryan, of Anne Arundel County, seconded the motion and it was carried.

Mr. Turner read Resolution No. 31, and moved its adoption. Mr. Burall seconded the motion.

MR. ROY BROOKES: I would like to amend that to include "Cooperatives." We have at the University of Maryland a new course in cooperatives. The first complete course of the kind. I would like to have that included there. This will encourage young men or young women to take up that course.

MR. NUTTLE: To include there also a course in Cooperatives. I think we can add that.

The Resolution was passed as so amended.

MR. ENSOR: Does this mean a scholarship annually or for the four years?

MR. BROOKES: I think one every four years or whatever the course is.

MR. TURNER: For four years might be right expensive.

MR. MANN: We must have cooperatives, though.

Mr. Turner read Resolution No. 32, and moved its adoption. Mr. Hovermale seconded the motion and it was carried.

Mr. Turner read Resolution No. 33, and moved its adoption. Mr. Keenan seconded the motion. Mr. Chaffee suggested that there be a rising vote to this resolution and it was so passed.

Mr. Turner read Resolution No. 34 and moved its adoption. Mr. Nuttle called attention to the fact that Mayor Jackson was not present, but he had sent a long telegram, which through mistake was not read. Mr. Nuttle suggested that the resolution be re-written.

At this time Mr. Wise presented the following Resolution:

"MARKETING AGREEMENTS (19A)

We affirm the position of the American Farm Bureau Federation asking that canning crops be included in the Marketing Agreements Act on a basis satisfactory to the growers concerned."

Mr. Chaffee moved its adoption. Mr. Thieroff seconded the motion and it was carried to be marked "Resolution No. 19A."

MR. WISE: In talking over the proposition with Mr. Nuttle, we thought it was important to present the program for the year, just generally, so that we could have something to work on. We had a Committee prepare this report and Wilbert Smith is going to present it to you at this time.

MR. SMITH: This was suggested at the New Orleans meeting.

STATE ACTIVITY.

1—Committees.

(a) Program and Memberships.
(b) Cooperative Development.
(c) Legislative.
(d) Agricultural Policy.

2—Composition of Committees.

(a) One Farm Bureau director from each State district.
One County Agent from each State district.
Two representatives of Associated Women.
Director of Extension, County Agent leader and A. A. A. executive in State.
State Farm Bureau officers and fieldmen.

(b) One Farm Bureau director from each State district.
One representative from Southern States Service Stores.
One representative from Eastern Shore Association of Coops.
One representative from Farm Bureau Petroleum Coops.
One representative from Wool Pool.
One representative from Livestock Marketing Association.
One representative from Insurance.
One representative from Western Maryland Coops.
One representative from Maryland Tobacco Growers Assn.
Chairman Associated Women of Maryland.
Officers and Fieldmen Maryland Farm Bureau.

(c) One director from each State district.
Officers and Fieldmen Maryland Farm Bureau.

(d) One director from each State district.
One County Agent from each State district.
Director of Extension Service.
Officers and Fieldmen Maryland Farm Bureau.

STATE AND DISTRICT MEETINGS.

1—Annual Meeting.

2—State-wide meeting of State Board, State Program and Membership Committee, County Secretaries, Associated Women, County Chairman and two delegates from each County, Board of Directors, County Program and Membership Committee—(to meet with Mr. Blackburn).

3—Livestock and Wool Pool Meetings in Baltimore.

4—Planning group meetings with officers of present group, representatives from new districts, County President and Associated Women Chairman—(to meet with Mr. Warbington).
(District meeting).

5—June week meetings (District).

6—State-wide meeting.

State Board, County Secretaries, Associated Women, Chairmen, Planning group leaders. Speaking Contest.

7—American Farm Bureau Federation Convention.

ACTIVITY THROUGH LEADERSHIP WILL DO THE JOB.

In order for a County Farm Bureau to raise its standard it is necessary to develop leadership through which activity will insure better economic conditions, better cooperative facilities, more legislative accomplishments and make the farm a better place for Maryland farmers to live.

We suggest the following:

1—A continuation of and the creation of more Farm Bureau Planning groups in 1939.

2—The development of leaders training schools in each County.

3—Regular meetings of Board of Directors, working on a definite, well-planned program.

4—Appointment of Committees to carry out National State-County programs.

5—Active cooperation with State Office and Extension Service and vice versa.

COUNTY ACTIVITY—1939.

1—*Perfect Organization.*

a. Office and correspondence.
b. Budget County finances.
c. Insurance X-cards in order.
d. Membership records up to date.

2—*Send out periodical News Letter to Members* (at least 4 per year).

3—*Regular Directors' meetings.*

4—*Projects and Program.*

a. Cooperate with Farm Bureau Insurance program.
b. Continue present and organize more Farm Bureau Planning groups in County.
c. Correlate the activity of Planning Groups and Board of Directors in order to have effective program.
d. Select one or two specific projects suggested by Planning groups and Board of Directors and work out.

5—*Committees.*

a. General:

(1) Membership and Program.
(2) Cooperative Development.
(3) Legislative.
(4) Agricultural Policy.

b. Special:

To carry out projects selected by Directors such as Livestock, Wool, Tobacco, Truck, Potato, Poultry, Junior Farm Bureau, Canning Crop, Insurance, Social and Educational.

6—*Meetings.*

(1) Educational.
(2) Banquet.
(3) Picnic.
(4) Annual.
(5) 2 series of local meetings per year.

Leader Training Meetings.

(1) At least two meetings prior to Membership Campaign.

COMPOSITION OF COUNTY COMMITTEES.

1—Program and Membership.
Chairman of each Planning group.
County Agent and Home Demonstration Agent.
Chairman of Associated Women of County.
Three representatives from County Board of Directors.

2—Cooperative Development.
Managers of Coop. Stores.
Leaders in other Cooperative Developments sponsored by Farm Bureau.
Two representatives of County Board.

3—Legislation and Taxation.
Local Attorney (Member of County Farm Bureau).
Representatives from Efficiency and Economy Committees in County.
Three members of County Board.

4—Agricultural Policy.
Three members of County Board.
County Agent and Home Demonstration Agent.
County Chairman Associated Women.

Several amendments were suggested: 1, To add to section (b) Western Shore of Maryland; 2, To add Southern Maryland Tobacco Growers, but Mr. Wise explained that the program was only tentative and asked them to accept the spirit of it, and it could be changed later if desired.

Mr. Smith moved the adoption of the report, Mr. Winterberg seconded the motion and it was carried.

DR. SYMONS: I think it might be wise that this meeting request the Executive and Legislative Committee of the Farm Bureau to consider preparing a general bill for the bonding of commission merchants and all other persons and firms contracting with farmers for the purchase of their products.

The following resolution was thereupon presented:

"RESOLVED, that this meeting of delegates request the Executive and Legislative Committee of the Maryland State Farm Bureau to consider preparing a general bill providing for the bonding of commission merchants and all other persons and firms contracting with farmers for the purchase of their produce."

Mr. Koons moved the adoption, seconded by Mr. Burall, and it was carried.

It was then agreed that the meeting proceed with election of officers while they awaited Mr. Walker. Mr. Wise presented the following report of the Nominating Committee:

For President—P. C. Turner.
For Vice-President—Claude Phillips.

Mr. Hochild moved the nominations for President be closed, Mr. Connick seconded the motion and it was carried, and the Secretary, Mr. Wise, was authorized by unanimous consent, to cast the ballot for Mr. P. C. Turner for President.

MR. WISE: I cast the ballot for P. C. Turner for President for 1939.

MR. BERGEN BROWN, of Charles County: Mr. Chairman, Southern Maryland has never been favored with the election of a man from that section for President or Vice-President of the Maryland Farm Bureau. That was all right while our membership from that section was small, but now we have one-fourth of the membership of the Farm Bureau from Southern Maryland, and we have a very excellent man to offer as Vice-President. I wish to nominate Mr. Sam Linton as Vice-President. I have not time now to dwell upon his qualifications.

Mr. Bolton, of Charles County, seconded the nomination.

It was moved by Mr. Burall, seconded by Mr. Rosenstock, that the nominations be closed.

MR. NUTTLE: You have two nominations for Vice-President. How will you vote?

It was decided that the vote must be by ballot, and Mr. Nuttle appointed the following as Tellers: Mr. Miles Lankford, of Somerset County; Mr. Griffith, of Montgomery County, and Mr. Joseph Blandford.

At this time the following resolution was offered:

RESOLVED, that actions of the Board of Directors as contained in the minutes of their proceedings since the last corporation meeting, be and they are hereby approved and ratified.

Mr. Davis, of Harford County, moved the adoption, Mr. McDowell, of Cecil County, seconded the motion, and it was carried.

Mr. Roy Brookes moved that a recess be taken in order to hold the annual meeting of the Maryland Agricultural Society. Mr. McDowell seconded the motion and it was carried.

The Maryland Farm Bureau re-opened its meeting, and it was announced by the tellers that Mr. Claude Phillips had been elected Vice-President.

MR. NUTTLE: We will now come back to the tax question.

MR. ROSENSTOCK: Your present income tax is dedicated to relief and we want it dedicated to public education.

MR. NUTTLE: You want it dedicated to education alone. That is your amendment.

Mr. Burall seconded the amendment.

MR. JOSEPH BLANDFORD: Mr. President, I happen to be a member of that Committee, and the passage of this amendment might have a very far-reaching effect. I think with the amount of consideration that it has had, that it would be unwise to tie up the funds of the income tax to dedicate them to the purpose of education. It is known as a matter of fact that the entire property tax in the State now is used for funding the State's debt. In addition to that some part of the inheritance tax is used and a large part of the gasoline funds is used to finance the State debt. A large part of that debt is for educational purposes already incurred. I believe it would be unwise to dedicate the funds from the income tax to education without further serious consideration.

MR. ENSOR: Will Frederick County tell us if you have any suggestion as to where the money to pay for that is to come?

MR. ROSENSTOCK: Yes, a 2% retail sales tax. In time, you are going to have the relief problem back on your hands.

MR. NUTTLE: If we are going to vote on a sales tax, if we are going to amend this to provide for a sales tax, I think we should hear from Mr. Walker first.

MR. ENSOR: The only thing we all know is that we have got to have money. In our County we are opposed to a sales tax. You recall the first income tax suggested in this State. I had the same thing in mind that Frederick County has. The protection of real estate. That failed. It occurs to me if you do not have a flat income tax—if you do not get any income tax you are going to have an increased tax on real estate. We are all agreed that we do not want any increased tax on real estate. I do not think there is a chance in the world that farmers are going to stick together on a sales tax. We have voted it down before. We are opposed to it.

MR. NUTTLE: Do you want a vote on the sales tax?

MR. ROSENSTOCK: We could have a 2c sales tax passed within the law, it could be a wholesale tax on the manufacturer and not a retail tax.

(At this time Mr. Walker came in the room.)

MR. NUTTLE: We are sorry to pull you all the way from College Park on such a bad day. Mr. Rosenstock would like to know what a 2c sales tax on wholesale manufacture alone would mean to the farmer.

MR. WALKER: I am sorry I do not know about your discussion, but I would say that a retail sales tax in this State, a 2c retail sales tax, would produce anywhere from seven and a half million to ten million, depending upon the method in which it is administered, depending upon whether we use tokens or some other method, or various other experiments that might be added on to the expense, but we have to recognize,

of course, that the retail sales in 1938 decreased about 14% from those of 1937. Of course, the total national income has decreased the same. We have to recognize this fact: that if you are using any revenue for the support of schools that revenue should be as uniform as possible. It should be regular in its revenue production, so for that purpose I think we must rely upon some source that is probably more regular than an income tax which we all know varies very greatly. That and the inheritance tax are most irregular.

MR. TURNER: Mr. Walker, the Grange and Farm Bureau have agreed to this program, and I think it would be ridiculous to start now with some other plan.

MR. WALKER: Wait until we get through.

MR. ROSENSTOCK: I would like to ask you what you expect a. and b. on page 30 of the tax report to raise?

MR. WALKER: $4,000,000 based on the 1937 income; $3,500,000 on the 1938 income.

MR. ROSENSTOCK: Gentlemen, it is our theory that unless you attempt to make the people that pay the taxes understand about this relief matter, you are not going to get rid of this relief. That is our theory, we may be wrong. Unless you make the general public pay the tax for relief, we are not going to get rid of relief.

The second proposition is that as long as we have relief we have got to support it. We have passed all kinds of taxation, but we did not raise enough to meet relief. The sales tax will raise enough, and it does not affect the farmers as much as it does the manufacturers. Our theory is that the only way to beat this relief racket is to put it on the general public.

MR. TURNER: But if you have a sales tax, and a man wants to buy an automobile, he is going to go over the line where there is no sales tax and buy it.

MR. ROSENSTOCK: When he considers the cost of going over there, he will not save much. Just think of the cost of operating your car, or the railroad cost.

MR. TURNER: It is only a short distance and will not cost much to get there.

MR. WALKER: May I comment upon that question of the loss of revenue. The United States Department of Commerce made a study of that and it showed conclusively that in those counties adjoining States with no sales tax there was a marked decline in retail sales. That is, for counties in States with sales tax, adjoining other States with no sales tax. They lost materially in business. I might also say that not all the States have seen fit to define agricultural machinery, fertilizer and things used for production purposes. That is a matter for the Courts to decide whether a farmer is a manufacturer or not. The Supreme Court has ruled that the farmer is not a manufacturer. Therefore, I would suggest that you consider this when you think of the articles that are used on the farms. The Courts may not sustain your sales tax as to that.

MR. KOONS: How many States have sales taxes?

MR. WALKER: Twenty-four.

MR. TURNER: Will you tell us why they have it and why we do not?

MR. WALKER: They are in financial difficulty and it was to help to bring them out of the red and to liquidate the bonds outstanding. They had a high bonded debt and they had to take care of it.

MR. TURNER: We are not in that condition and we do not need it.

MR. WALKER: I hope not. I might suggest that I have a very brilliant publication in my briefcase, referring to Indiana—something about a novel method of raising revenue by combining the income tax and some phases of a sales tax.

MR. NUTTLE: We also want to hear something about that idea of dedicating the income tax to education.

MR. JOSEPH BLANDFORD: This resolution would dedicate funds from income taxes to educational purposes. I believe we should dedicate them to the reduction of the property tax.

MR. ROSENSTOCK: That would relieve the property tax of part of the burden of education. What I want to impress upon you is that the five Western Maryland Counties are unalterably opposed to raising more money just to spend it for the politicians. Your consumer wants to load it on the property tax, and unless we take a stand now we never will get any relief on the property tax.

MR. WISE: Of course, that coincides with the plan your Committee had in mind when they drew up the report. We are asking that no further bonds be issued as a burden upon property. We want to try to reduce the real estate taxes.

MR. NUTTLE: I will call for a vote upon the amendment to dedicate this money for educational purposes.

Upon vote taken the amendment was lost.

MR. NUTTLE: Now we will pass on to the resolution on taxes.

MR. TURNER: We passed a resolution requiring the Legislative Committee to accept a sales tax in lieu of a raise in real estate.

Upon vote taken the original Resolution No. 5 as read by Mr. Turner was adopted.

The following motion was by common consent passed:

Resolved, that the directors be elected by acclamation instead of by written ballot.

DIRECTORS

Maryland Farm Bureau, Inc.

Allegany County—R. C. Wilson
Anne Arundel County—Oscar Grimes
Baltimore County—P. C. Turner
Calvert County—J. Ellis Bowen
Caroline County—Richard Blackburn.
Carroll County—John S. Bushey
Cecil County—D. B. McDowell
Charles County—S. C. Linton

Dorchester County—A. K. Austin
Frederick County—Alvie M. Etzler
Garrett County—William Winterberg
Harford County—T. R. Brookes
Howard County—Roby H. Mullinix
Kent County—H. S. Leaverton
Montgomery County—J. W. Jones
Prince Georges County—W. R. C. Connick
Queen Annes County—John W. Smith
St. Mary's County—Grenville Lewis
Somerset County—William T. Chaffey
Talbot County—F. G. Shillinger
Washington County—R. C. F. Weagley
Wicomico County—Claude C. Phillips
Worcester County—W. H. Holloway

Maryland State Beekeepers' Association
Dr. E. N. Cory

Maryland Crop Improvement Association
Lawrence E. Ensor

Hillsboro-Queen Anne Cooperative Corp.
Charles I. Boyle

Maryland Horse Breeders' Association, Inc.
Major G. L. Stryker

Maryland State Horticultural Society
G. Rust Canby

Maryland Cooperative Milk Producers, Inc.
R. W. Shermantine

Maryland State Poultry Council
J. W. Snoddy

Maryland Stockmen's Association
James Clark

Maryland Tobacco Growers' Association
Nelson Turner

Maryland Vegetable Growers' Association
F. Ridgely Todd

Respectfully submitted,

WILBERT L. SMITH, *Chairman*
FRANCIS SHILLINGER
GRENVILLE LEWIS
ROBY MULLINIX
WILLIAM WINTERBERG
JOHN SMITH
JOHN S. BUSHEY

Mr. Smith read the directors nominated. Duly moved, seconded and carried that the nominees be confirmed and declared elected.

MR. NUTTLE: We would like the newly elected President to come up. Mr. Turner, it gives me a great deal of pleasure to present you to this group as their new President. I now join the ranks of a distinguished group, Mr. Cohill, Mr. Davis, Mr. Cockey and Mr. Massey, and you can hang my picture there. It does, indeed, give me pleasure to turn the gavel over to you and wish you a most successful year in 1939, any anything that I can do you have only to call upon me.

MR. TURNER: You have bestowed upon me the greatest honor of this organization. I pledge support to the wonderful program outlined to you today and I only hope that I may be able to serve the farmers of Maryland as my predecessors have. I accept this honor in a spirit of prayer and ask your prayers and help from all the farmers of Maryland.

MR. NUTTLE: I desire to present to you as your Vice-President, Mr. Claude Phillips. We are very proud of Claude on the Eastern Shore.

MR. PHILLIPS: I appreciate the honor you have conferred upon me, and I hope I can fulfill my duties with Mr. Turner to the satisfaction of all concerned.

MR. NUTTLE: I wish to say that the manner in which we have taken up the problems here today shows that we have no cut and dried program. I hope you were satisfied, Mr. Rosenstock?

MR. ROSENSTOCK: Oh, we will present our bill anyway.

MR. NUTTLE: I hereby declare this annual convention adjourned (1.45 P. M.).

ANNUAL MEETING OF THE MARYLAND AGRICULTURAL SOCIETY

Friday, January 13, 1939

Mr. Nuttle presiding; meeting called to order 12:00 noon.

MR. NUTTLE: The State appropriates $3,350 a year for this Society, and we have this meeting each year to elect officers and receive the Treasurer's report. I will now call for the reading of the minutes.

The secretary read the call of the meeting.

December 22, 1938.

To County Secretaries and
Affiliate and Associate Secretaries.

Notice of Annual Meeting of the Executive Council of the Maryland Agricultural Society

Dear Sir:

The annual meeting of the Executive Council of the Maryland Agricultural Society will be held January 13, 1939, at 11:00 A. M., Lord Baltimore Hotel, Baltimore, Maryland.

Blanks have been sent you for you to submit the credentials for the council members of your organization.

Very truly yours,

C. E. WISE, JR., *Secretary,*
Maryland Agricultural Society.

CEW:EM

Members of the Council present:

Allegany—R. C. Wilson, Wilbur Perrin, LeRoy Frazee; *Anne Arundel*—Oscar Grimes, Roland Leitch, Hall Worthington; *Baltimore*—P. C. Turner, G. William Sattler; *Calvert*—J. Ellis Bowen, John B. Morsell; *Caroline*—Richard Blackburn, Martin C. Voss; *Carroll*—John S. Bushey, George C. Brown; *Cecil*—D. B. McDowell, Edgar P. Bishop; *Charles*—S. C. Linton, Bergen Brown, F. B. Bolton; *Dorchester*—A. K. Austin, A. R. Peterson, Reginald Jones; *Frederick*—A. M. Etzler, T. S. Anderson, W. E. Burall; *Garrett*—William Winterberg, Charles B. Miller, R. O. McCullough; *Harford*—A. G. Ensor, T. Roy Brookes; *Howard*—Roby H. Mullinix, J. W. Lord; *Kent*—H. S. Leaverton, Mrs. H. T. Williams; *Montgomery*—J. W. Jones, J. D. King; *Prince George's*—W. R. C. Connick, William E. Duvall, J. E. Hogue; *Queen Anne's*—John W. Smith, Robert T. Newell; *Somerset*—William T. Chaffey, J. Miles Lankford, Harry Keenan; *Talbot*—F. G. Shillinger, Thomas F. Shockley; *Washington*—R. C. F. Weagley, J. K. Funk, R. S. Ankeney; *Wicomico*—Claude C. Phillips, Vernon V. Hughes; *Worcester*—W. H. Holloway, Hance V. Cherrix, R. N. Stagg; *Maryland State Beekeepers Association*—J. R. Abercrombie; *Maryland Crop Improvement Association*—T. Roy Brookes, J. W. Magruder, Lawrence E. Ensor; *Hillsboro-Queen Anne Cooperative Corporation*—T. B. Todd, Jr., Charles I. Boyle; *Maryland Horsebreeders Association*—Major G. L. Stryker; *Maryland State Horticultural Society*—G. William Gardenhour, A. F. Vierheller, H. C. Whiteford; *Maryland Cooperative Milk Producers, Inc.*—Wilson A. Heaps, George B. Kelly, P. W. McKay; *Maryland State Poultry Council*—J. W. Snoddy, W. H. Rice, Mrs. W. W. Hopkins; *Maryland Stockmen's Association*—George K. Bailey; *Maryland Tobacco Growers' Association*—M. P. Harrison, Oden Sansbury; *Maryland Vegetable Growers Association*—F. Ridgely Todd, W. R. Ballard.

Mr. Wise read the minutes.

MR. NUTTLE: If there are no corrections the minutes will stand as read. We will now have the Treasurer's report.

Dr. Symons presented the following report:

MARYLAND AGRICULTURAL SOCIETY—MARYLAND FARM BUREAU FEDERATION
FINANCIAL STATEMENT FOR FISCAL YEAR 1937-1938

Appropriation for 1937-1938 ..... $3,350.00

Expenditures:

Date	Payee	Classification	Expended
1937			
Nov. 5	Angela M. Feiser	Community Ex. (Calvert Co.)	$ 5.00
5	Maryland Farm Bureau Federation	Office Rent (Oct.-Nov.)	106.66
27	J. B. Morsell	Community Ex. (Calvert Co.)	25.00
Dec. 10	R. S. Brown	Community Ex. (Talbot Co.)	25.00
10	R. K. Remsberg	Community Ex. (Washington Co.)	15.00
10	H. R. Shoemaker	Community Ex. (Frederick Co.)	25.00
10	Maryland Farm Bureau Federation	Office Rent (Dec.)	53.33
20	Margaret T. Johnson	Communication (Postage)	75.00
20	H. M. Carroll	Community Ex. (Harford Co.)	25.00
20	H. B. Derrick	Community Ex. (Baltimore Co.)	12.50
20	M. D. Moore	Community Ex. (Washington Co.)	15.00
1938			
Jan. 10	J. Wilson Lord	Community Ex. (Howard Co.)	25.00
10	M. D. Moore	Community Ex. (Washington Co.)	15.00
10	Peninsula Horticultural Society	Community Ex. (Lower Eastern Shore)	150.00
10	Maryland Farm Bureau Federation	Office Rent (Jan.)	53.33
27	Henrietta Stonestreet	Printing (Reporting Annual Meeting)	75.00
27	King Brothers	Printing (Programs Annual Meeting)	52.00
27	K. G. Connolly	Travel (Baltimore Annual Meeting)	7.45
27	Linden S. Dodson	Travel (Baltimore Annual Meeting)	7.27
27	Catherine Eversfield	Travel (Baltimore Annual Meeting)	6.14
27	Minnie M. Fyffe	Travel (Baltimore Annual Meeting)	6.80

Date	Payee	Classification	Expended
27	Albin Kuhn	Travel (Baltimore Annual Meeting)	3.86
27	C. E. Phillips	Travel (Judge Annual Meeting)	25.10
27	R. G. Rothgeb	Travel (Judge Annual Meeting)	11.05
27	M. G. Mizell	Community Ex. (Washington Co.)	15.00
27	Arthur R. Reed	Community Ex. (Publicity Annual Meeting)	50.00
Feb. 7	W. S. Campfield	Travel (Address Annual Meeting)	14.80
7	W. S. Hough	Travel (Address Annual Meeting)	8.10
7	Carroll R. Miller	Travel (Address Fruit Growers)	5.50
7	R. H. Sudds	Travel (Address Annual Meeting)	35.16
7	P. D. Brown	Community Ex. (Charles Co.)	50.00
7	John H. Carter	Community Ex. (Garrett Co.)	49.25
7	Anna Trentham	Community Ex. (Baltimore Co.)	12.50
7	Maryland Farm Bureau Federation	Community Ex. (Award)	7.17
15	M. Edward Grogg	Office Supplies and Stationery	20.00
15	Peninsula Horticultural Society	Printing (Annual Reports)	100.00
15	Pinkerton's National Detective Agency	Community Ex. (Guard Service)	24.00
15	Maryland Farm Bureau Federation	Office Rent (Feb.)	53.33
Mar. 7	Maryland Farm Bureau Federation	Travel (Farm Bureau Meeting, New Hampshire)	66.82
7	L. W. Shepherd	Community Ex. (Southern Maryland Horse Show)	25.00
7	Maryland Farm Bureau Federation	Office Rent (March)	53.33
16	Railway Express Agency	Office Supplies and Stationery (Express)	7.48
18	King Brothers	Printing (Grange Annual Report)	165.50
Apr. 12	H. C. Whiteford	Travel (Farm Bureau Meeting)	4.50
12	C. E. Wise	Travel (New England Conference—New Hampshire)	48.80
12	Maryland Farm Bureau Federation	Office Rent (April)	53.33
May 12	Publicity Engravers	Printing (Engraving Charts, Annual Report)	6.12
12	Maryland Farm Bureau Federation	Office Rent (May)	53.33
28	Railway Express Agency	Office Supplies and Stationery (Express)	.36
28	John D. Leatherman	Community Ex. (Washington Co.)	15.00

Date	Payee

79921

Date	Payee	Classification	Expended
June 28	Maryland Farm Bureau Federation	Office Rent (June)	53.33
Aug. 1	R. V. Truitt	Travel (Address Meeting)	29.60
1	Maryland Farm Bureau Federation	Office Rent (July)	53.33
12	The Weant Press	Printing (Annual Reports)	678.70
12	T. B. Symons	Other Expenses (Labor, Rpts., An. & Com. Meetings)	25.00
12	C. E. Wise	Other Expenses (Labor, Rpts., An. & Com. Meetings)	25.00
12	A. H. Snyder	Other Expenses (Labor, Annual Report & Programs)	20.00
12	K. G. Connolly	Other Expenses (Labor, Annual Report & Accounts)	15.00
12	Maryland Farm Bureau Federation	Office Rent (Aug.)	53.33
Sept. 7	The Maurice Leeser Company	Printing (Poultry Program)	35.00
7	The Maurice Leeser Company	Printing (Livestock Show)	87.68
7	Maryland Farm Bureau Federation	Travel (Chicago Convention)	84.87
7	Maryland Farm Bureau Federation	Travel (Meeting Ludlow, Vt.)	33.40
7	Captain Vaughn T. Gray	Community Ex. (Poultry School)	7.50
7	Maryland Farm Bureau Federation	Office Rent (September)	53.37
23	Modern Stationery and Printing Co.	Office Supplies and Stationery (Binders)	7.47
23	M. H. Berry	Travel (Judging Exhibit)	8.90
23	C. W. England	Travel (Timonium Fair)	5.15
23	Fred H. Leinbach	Travel (Judging)	19.80
23	James B. Outhouse	Travel (Judging)	15.95
23	R. G. Steinmeyer	Travel (New York)	18.14
23	Dorothy Emerson	Community Ex. (Girls' Clubs)	100.00
29	H. E. Botsford	Travel (Ithaca, N. Y.)	25.92
29	Travel	Travel (Ithaca, N. Y.)	46.50
29	A. W. Woods	Travel (Judging)	.50
29	M. T. Johnson	Communication (Postage)	47.32
29	Louise Rust	Other Expenses (Labor, Annual Report)	30.00
29	Charles L. Downey	Other Expenses (Labor, Judging Contest)	4.37
	Total Appropriation		$3,350.00

The Treasurer's report was duly accepted.

MR. NUTTLE: We will now have the election of officers.

Mr. Connick moved, Mr. Burall seconded—

Resolved: That the secretary of this meeting cast a unanimous ballot for the following to be elected officers of this Society for 1939:

P. C. Turner—President
C. C. Phillips—Vice-President
C. E. Wise, Jr.—Secretary
T. B. Symons—Treasurer

Motion carried, and Miss Stonestreet, reporting the meeting, cast the ballot for the officers.

Mr. Connick moved that the meeting adjourn, and Mr. Ensor seconded the motion. Carried unanimously. Meeting adjourned at 12.30 P. M.

RESOLUTIONS, 1939
MARYLAND FARM BUREAU, INC.

1. We pledge anew our confidence in President O'Neal and the other officers of the American Farm Bureau Federation. We commend their efforts to correlate all organized farmers into a National program for agriculture and their efforts to secure for America an economic balance which will assure security for labor, stability for industry, and parity for American agriculture.

Believing as we do that recognition of this principle by all groups, and translation of such recognition into action, is the only way out of our economic difficulties, we respectfully urge the President of the United States to call together representatives of industry, labor and agriculture selected from a list of those recommended by the duly selected leaders of the three major economic groups, to discuss a program of action designed to promote economic balance between these groups on a basis that will permit full utilization of our great productive resources.

Farm Credit

2. Farmers are appreciating more and more that the credit facilities of the Farm Credit Administration are being builded for their own industry and justify a continuing and increasing support as well as a greater participation on their part in the direction and management of those credit agencies. Experience indicates that substantial improvement in these services can and should be made.

The Maryland Farm Bureau, Inc., commends to the farmers of the State a more active interest and participation in the use and operation of these credit institutions.

Public Safety

3. We pledge our cooperation to all agencies working toward the prevention of automobile accidents and the elimination of road hazards wherever possible. We urge the strict enforcement of laws and traffic

regulations having a bearing on our accident record, and since many of our serious accidents are caused by those driving while under the influence of intoxicating liquors, we urge that a jail sentence be imposed on those convicted of this offence.

We heartily endorse Governor O'Conor's avowed intention to reorganize the Magistrate courts to the end that our traffic laws would be more efficently administered.

Farm Tenancy

4. We are heartily sympathetic with a conservative national program for reducing tenancy and the encouragement of farm and home ownership. We are opposed to indiscriminate loans of public monies for the purchase of lands for any and all tenants or persons without proven experience to engage in farming. We believe that a safe program can be developed whereby every safeguard can be erected to encourage deserving tenants to purchase farm homes at the lowest possible rates of interest and amortization.

Taxation—Tax Committee Report

5. We highly commend the members of the Joint Committee of the Grange and the Farm Bureau for the work done on their comprehensive report of the tax situation and their sound recommendations. We hereby endorse the report carrying with it the recommendations for:

A—A flat income tax of 2½ per cent on net income of individuals.

B—An income tax of 1½ per cent on net incomes of corporations.

C—A 5 per cent tax on income from intangibles—with the 15-cent state tax rate on intangibles eliminated.

D—Continuation of the present tax on amusements, cosmetics, pinball and music machines, recordation of documents, titling of motor vehicles and the manufacturing of whiskey; and an increase in the tax on beer to $1 per barrel.

5-A. We also recommend that a referendum on the graduated income tax be provided for the election in 1940.

While it is necessary for units of government to borrow from time to time we believe that proposed bond issues should be more carefully considered. We are opposed to further state bond issues serviced from the general property tax.

We condemn discriminatory and punitive taxation of the type involved in the Patman anti-chain store bills. Such unnecessary taxes and restrictions on distribution not only increase costs to the farmer as a consumer, but tend to reduce total consumption and thereby limit production in agriculture as well as in industry. We oppose all such unnecessary taxes and restrictions, both state and national.

Conservation Program

6. We urge the passage of a constructive Conservation Act. We approve in principle the proposed bill prepared by the Maryland Wild Life

Federation. We appeal to all who believe in conservation to compromise their sectional views to the end that an act will be passed that will give us true conservation that will safeguard the interests of the whole State.

Forestry

6-A. Forestry is an important part of Maryland's agriculture—more than one-half of the forest land being in farms, and as forestry is recognized as a part of agriculture by the Federal Government, the Maryland Farm Bureau, Inc., opposes the transfer of the Forestry Department from the State Department of Agriculture to any other department of the State.

Land Use

7. The Maryland Farm Bureau is sympathetic to the development of an intelligent and systematic land use policy. We recognize that there are several sections in the State which contain sub-marginal land that could be better devoted to forestation and conservation than to any phase of agricultural production. Our organization wishes to cooperate with the State and Federal Governments in their present and future plans for proper land use. We further endorse the Severance Tax for lands devoted to forestry, under the proper supervision.

Japanese Beetle

8. We urge a State appropriation of $60,000 per year for the control of Japanese Beetle and we recommend continued appropriations from the Counties to augment those of the State.

Bang's Appropriation

9. We urge a State appropriation of $200,000 per year for Bang's Disease eradication. We draw attention, that after May 1st the Federal government will match State funds. It is obvious that the State will save money by quickly conquering this disease before there is further spread.

Cooperative Development

10. We reaffirm our faith in the principles of business cooperation among farmers in all fields. We pledge our active support to all cooperative organizations serving farmers in Maryland. We are particularly desirous, as a Farm Bureau organization, of using our best efforts to correlate the various cooperatives in the State to the end that all farmers may be served by the cooperative or cooperatives best able to serve them in an efficient and harmonious manner.

Relief

11. We are sympathetic with reasonable support of aid to old age, dependent children, and unemployables by the Federal, State and County governments. We urge the strictest scrutiny of affording relief for the

generally unemployed, and we believe the pay for such relief should not compete with relative wages for farm labor or for construction work.

We urge that local authorities be given more authority in the fixing of such rates for the relief of the generally unemployed.

State Grading Law

12. Prices received for fresh fruits and vegetables by Maryland producers are lower than conditions warrant. A State law to permit the voluntary establishment of grades and standards would prevent the dumping of low grade produce and do much to improve the situation.

We feel that our farmers should be informed as to the advantages of a State grading law. We urge all our forces to concentrate on this project looking to the passage of a bill in the present session of the Legislature.

Rural Health

13. We heartily endorse the resolutions as adopted by the Associated Women of the American Farm Bureau Federation in regard to extension of Public Health Service, Rural Hospitals and Medical Care in rural areas.

We urge the Counties to explore the possibilities of group hospitalization such as was put into operation in Baltimore County on January 1st, 1939.

Animal Meat Importation

14. We oppose the repeal, advocated in some sections, of Section 306-A, of the Smoot-Hawley tariff since such repeal would allow the importation into the United States of meat animals from countries not free from foot and mouth and other similar animal diseases.

Reciprocal Tariff

15. We recommend that in making reciprocal tariff agreements with foreign governments no dairy products be admitted that are not produced under the same health regulations as required for our dairymen, and that farm products should not be allowed entry that would seriously affect prices of these products.

Rural Electrification

16. We affirm our belief that farmers are entitled to the benefits and services of high line Rural Electrification power, and such loans from the government as will afford to the State sufficient funds to organize sound projects and construct lines.

Monetary Policy

17. We reaffirm our position in support of the American Farm Bureau Federation in their program for monetary reform which includes continuance of the President's power to adjust the gold content of the dollar until such time as a permanent monetary authority is provided by the National Congress.

Roads

18. We again protest the policies of the past that have changed our road system from one that was the pride of our people, and the envy of the nation, to a place near the bottom when compared to other States.

We urge the following program:

(1) Stop all diversion of motor revenue to other than road use, including construction, maintenance and road debt service.

(2) Appoint a road commission of qualified men.

(3) Expand the use of convict labor on roads; amend the law to give the Counties the privilege of using convict labor to build, grade or prepare material to maintain hard surface or gravel Farm-to-Market roads.

(4) Allow any County that so desires to take over its County roads, and receive its proportionate part of the 1½c gas tax.

(5) The Road Commission follow a policy of proper weed control.

(6) The present law allocating 1½c of the gas tax to the Counties be re-enacted.

Growers Protection

19. We urge the enactment of legislation requiring Canneries and their Agents to be licensed by the State Board of Agriculture and as a pre-requisite to securing a license to post bond with the State Board of Agriculture, which bond shall serve to the benefit of growers of produce and be the growers' security for the payment to them of all sums which may be due and owing from Canneries or their Agents as the purchase price of produce sold to such Canneries.

19-A. We affirm the position of the American Farm Bureau Federation asking that Canning Crops be included in the Marketing Agreements Act on a basis satisfactory to the growers concerned.

Tax on Cigarettes

20. We believe that any special State tax on cigarettes or other tobacco products will operate to the disadvantage of producers of tobacco. We hereby register our opposition to any such tax.

Sale of Tobacco in Maryland

21. We pledge ourselves to support the efforts being made by the Farm Bureaus of the five Counties of Southern Maryland to secure legislation to correct unfair practices in the sale of tobacco on the Baltimore market which are decidedly detrimental to the growers.

Leaders Training

22. We commend to the leaders of all our Farm Bureau units the careful and thorough study of the suggestions made in the report of our Secretary, C. E. Wise, Jr. We urge each State and County Farm Bureau director to cooperate in the holding of leaders training school suggested by the Program and Membership Committee so that the program of the

Maryland Farm Bureau may contain those things in which the individual members are most interested, and so that the program of each unit of our organization may coordinate its efforts with those of other local units into a combined program for County, State and National Farm Bureau organization.

Train Length Bill

23. We are opposed to the passage of any so-called Train Length Bill by Congress, which would be unfair to the railroads and inimical to the best interests of farmers and the agricultural industry.

State-Wide Dog Law

24. We urge the inauguration of a study of successful State-Wide Dog Laws with the view of developing some plan of uniform legislation for the conservation of our game and especially for aiding our poultry and livestock industries.

State Fair Board

25. We endorse the progress made by the Maryland State Fair Board in building our agriculture exhibitions along the lines of education to our farmers, and approve their efforts to give special recognition to 4-H and F.F.A. boys and girls.

Wage and Hour Law

26. We protest the interpretation placed by the Administrator of the Wage and Hour Law on the exemptions granted processors of perishable farm products which have practically nullified the Act. We call upon Congress to amend the National Labor Relations Act by defining the phrase "Agriculture Labor" as it has been defined in the Fair Labor Act.

University of Maryland

27. The reorganization of our Agricultural forces and other Departments of the University of Maryland has proved satisfactory and efficient. The Maryland Farm Bureau urges the Governor and legislature to continue the present appropriation for all phases of the work of the Institution and that favorable consideration be given the special annual appropriations required by the several Agricultural Agencies as follows: For Bang's disease, $200,000; control Japanese beetle, $60,000; Soil Conservation, $10,000; drainage work, $6,000; bee disease control, $3,000; strawberry disease control, $5,000; and for exhibit at World's Poultry Congress $4,500; and $10,000 for investigation and control of tobacco plant bed diseases; poultry disease control, $12,000; enforcement of fresh egg law, $10,000. We urge that the consideration of these urgent needs not interfere with the regular appropriations for the general work of the State University.

United States Department of Agriculture

28. We desire to register our disapproval of the transfer of any departments or bureaus from the United States Department of Agriculture

to any other Federal department, and also oppose the change in the name of the Department of the Interior to that of Conservation Department.

Fair Trade Act

29. We urge the repeal of the Fair Trade Act (Chapter 239) which compels retailers to sell articles at a fixed price, which was passed by our 1937 State Legislature.

Baltimore Markets

30. We deplore the congested conditions of the Wholesale and Commission markets at which our Maryland growers of vegetables have to market their crops in Baltimore, as graphically shown by the survey conducted by Dr. DeVault's Department of Economics of the University of Maryland.

We commend the movement started jointly by the Trucking organizations, the Extension Service, the Maryland State Farm Bureau, Anne Arundel County Farm Bureau, and the Baltimore County Farm Bureau looking toward a solution of this problem.

We pledge ourselves to help devise and push to conclusion, plans to correct the intolerable conditions now prevailing in these markets.

Scholarships

31. We recommend that the Maryland Farm Bureau go on record as favoring legislative action be taken to provide fully paid Scholarships to the University of Maryland to one student from each County every four years who would major in Agriculture, Cooperation or Home Economics. Said scholarship to be secured through competitive examination open to boys one time and girls the next.

Sale of Alcoholic Beverages

32. We urge the necessary changes in the Alcoholic Beverages Law so as to prohibit the sale of all alcoholic beverages between the hours of 12 midnight on Saturday and 6 A. M. the following Monday.

Producers Protection

32-A. Resolved that this meeting of voting delegates requests the executive and legislative committee of the Farm Bureau to consider preparing a general bill providing for bonding of commission merchants and all other persons and firms contracting with farmers for the purchase of their products.

Memorial

33. Whereas, the hand of Providence has called to the Great Beyond four of our outstanding members and leaders of the Maryland Farm Bureau during the past year, to wit:

(1) Our beloved and faithful past President, Charles T. Cockey, of Baltimore County;

(2) Our leading and distinguished Cooperative leader, I. W. Heaps, Manager and Secretary of the Maryland Cooperative Milk Producers, Inc.;

(3) Our earnest and devoted past President of the Harford County Farm Bureau and past Director of the Maryland Farm Bureau, Walter Spencer;

(4) Our beloved and enthusiastic President of the Somerset County Farm Bureau, and Director of the Maryland Farm Bureau, M. Fred Carver;

Resolved, by the Maryland Farm Bureau, that we express our sympathy and appreciation of these distinguished Farm Bureau leaders to their respective families and cause that this record be made in the proceedings of this meeting and due recognition be given in the adoption of these resolutions.

Appreciation

34. We, the Maryland Farm Bureau in convention assembled, desire to recognize with gratitude the contributions made to our program by the Honorable John Gontrum, Secretary of State, representing Governor O'Conor, Mrs. Charles W. Sewell, John J. Cornwell, Chester Davis, Dr. Mark Dawber, Dr. H. C. Byrd, and Albert K. Rowswell.

We are grateful to the management and staff of the Lord Baltimore Hotel for their fine cooperation.

We extend our thanks to all those who, as speakers, committee members and workers helped to make this twenty-third annual meeting such an outstanding success, and especially do we recognize the extra hours put in by President Nuttle, Secretary Wise, and others of the staff of our State organization.

REPORT OF THE JOINT TAX COMMITTEE OF THE MARYLAND STATE GRANGE AND THE MARYLAND FARM BUREAU FEDERATION, 1938-39

TREND OF FARM TAXATION IN MARYLAND

Property taxes have been the principal tax responsibility of farmers, but have been augmented by other tax imposts in later years. Because of that fact it is considered of importance to trace the trend of farm taxes since the pre-depression period.

Exhibit A, in the appendix of this report, shows the county tax rates for each year beginning 1928-29. Average county tax rates are three cents lower for 1938-39 than they were in 1937-38, but the state tax rate increased three-fourths of a cent. In Table 1 of the text, these tax rates have been applied to agriculture, using the amount of farm property assessments as the basis for weighting the individual county rates, and thereby determining the weighted average tax rate and the total tax levies against farm property in Maryland from 1928 to 1938.

Table 1—*Weighted Tax Rates and Total Taxes Levied Against Farm Property in Maryland,* 1928-1938.

Year	Weighted Tax Rate Against Farm Property (Per $100 Assessed Value)			Total Taxes Levied Against Farm Property*
	County	State	Total	
1928-29	$1.546	$0.257	$1.803	$4,707,805
1929-30	1.570	0.257	1.827	4,770,472
1930-31	1.562	0.250	1.812	4,731,305
1931-32	1.554	0.250	1.804	4,710,416
1932-33	1.473	0.250	1.723	4,498,918
1933-34	1.022	0.250	1.272	3,321,315
1934-35	.991	0.220	1.211	3,162,037
1935-36	1.118	0.220	1.338	3,493,646
1936-37	1.184	0.220	1.404	3,665,978
1937-38	1.199	0.222	1.421	3,710,367
1938-39	1.169	0.230	1.399	3,652,923

*Excluding passenger cars and trucks; the total assessment of all farm property used in these calculations being about $261,000,000.

The peak of farm property tax levies occurred in 1929-30, when they totaled $4,770,472. By 1934-35 the total had decreased to $3,162,037, and the amount has held rather constantly at about $3,700,000 during the last three levy years. In general, it may be said that the total farm property tax bill in Maryland is about $1,000,000 less than it was before the last depression.

A comparison of farm state and local tax liabilities with cash income derived from operating farms serves to illustrate the drain upon available farm cash income occasioned by tax payments. Table 2 shows such comparison for the last 3 years.

Table 2—*Comparison of Farm Cash Income with State and County Taxes Levied Against the Farming Business in Maryland,* 1935-1937.

Year	Total Farm Cash Income	Taxes Levied Against Farming Business			Taxes as Per Cent of Cash Income
		Property Taxes	Motor Vehicle Taxes*	Total Taxes	
1935	$62,823,000	$3,493,646	$876,893	$4,370,539	6.9
1936	68,440,000	3,665,978	881,613	4,547,591	6.7
1937	75,665,000	3,710,367	882,733	4,593,100	6.1

*Includes license fees, gasoline taxes and property taxes on farm trucks, and one-half of such on automobiles on farms.

Farm tax obligations for State and local purposes represent real estate, tangible personal property and motor vehicle tax levies. Such tax payments arise from the ownership of farm property and from farm operation costs. Briefly stated, taxes levied upon the farming business in Maryland, during the past 3 years, represented from 6 to 7 per cent of the cash income derived from that business. With a sharp decline in farm cash income in 1938, probably to the extent of a fifteen per cent decrease, it is quite evident that the relative tax burden will increase in 1938 to about what it was in 1936.

After 1929, farm cash income declined rapidly, whereas farm taxes remained relatively high for four years. Since 1932, farm cash income gradually climbed back to the 1928 level while farm taxes have been about 75 per cent of the 1928 base.

Table 3—*Comparison of Index for Farm Real Estate Taxes with Index for Farm Cash Income,* 1928-1937.

(1928 = 100)

Year	Farm Cash Income	Farm Taxes
1928	100.0	100.0
1929	117.4	101.3
1930	86.2	100.5
1931	71.9	100.1
1932	56.6	95.6
1933	61.3	70.5
1934	74.5	67.2
1935	86.3	74.2
1936	94.0	77.9
1937	104.0	78.8

With a sharp decline in farm prices and farm income since 1929, some reduction was necessary in farm property taxes, and as long as farm prices or income remain relatively low farm taxes must be kept proportionately low.

In 1928 and 1929 the index of farm taxes in Maryland, based on 1911-13 as 100, reached a peak of 242, as compared with an index of 164 for prices of farm products. Most of the increase in the amount of taxes paid by farmers to 1929 was due to increased quantity and quality of public services.

Table 4—*Relationship Between Farm Real Estate Taxes, Farm Prices and Farm Real Estate Values, Maryland,* 1913-1937.
(On Index Basis)

Year	Index Numbers of Farm Taxes (1913 = 100)	Index Numbers of Farm Prices (1909-14 = 100)	Index Numbers of Farm Real Estate Values (1912-14 = 100)
1913	100	100	100
1914	109	105	103
1915	110	106	104
1916	124	126	109
1917	126	186	118
1918	152	197	129
1919	160	213	136
1920	190	223	166
1921	187	153	146
1922	202	143	141
1923	215	148	136
1924	225	162	133
1925	232	172	131
1926	234	179	130
1927	237	155	126
1928	242	164	124
1929	241	167	123
1930	245	160	123
1931	237	133	120
1932	226	93	106
1933	174	98	90
1934	160	109	90
1935	174	115	91
1936	180	122	94
1937	182	134	98

County taxes levied against farm property in 1937 represented 4.3 per cent of the farmers buying income, as compared with county taxes representing 2.7 per cent of the buying income of non-farmers*. Buying income of the farm population averaged $300 per capita; for the non-farm population it was $548 per capita*. County taxes amounted to $13 per capita for the farming group and $15 per capita for the non-farming group.

*This includes non-cash incomes of farmers not separately available, which would, on the basis of estimates, increase the county taxes of non-farming groups to about 2.9 per cent of income and decrease the per capital income to about $500.

Table 5—*Comparison of Available Buying Income and County Property Taxes Payable for Farming and Non-Farming Groups in Maryland Counties*, 1937.

Item	Farming Group	Non-Farming Group	Total of Counties
Available Buying Income (Total)	$72,410,000	$367,580,000	$439,990,000
Per Family	1,343	1,907	1,737
Per Capita	300	548*	483
County Tax Levies (Total)	3,127,869	9,829,855	12,957,724
Per Family	58	51	52
Per Capita	13	15	14
County Taxes as Per Cent of Buying Income	4.3	2.7*	3.0

*This includes non-cash income of farmers not separately available, which would, on the basis of estimates, increase the county taxes of non-farming group to about 2.9 per cent of income and decrease the per capita income to about $500.

A comparison of net returns and tax liabilities of farm property with those of corporation stock illustrates the effect our property tax system may have upon the attraction of investment forms. Based upon returns to the individual, and taxes for which the property owners are liable, our property tax system imposes a relative tax burden upon farm property that is from two to three times as great as on corporation stock.

Data as presented below indicate that property taxation is yet a disproportionate burden upon real estate, especially farm real estate and the farmer, if considered either from the standpoint of the farm as a form of investment or the farmer's income for living.

Decreases in county tax rates in 1938-39 have been made possible by reason of increases in the taxable basis through reassessment in some counties; by improved methods of increasing the intangible property on the tax rolls; by the use of state revenues for reducing the county tax; and by local sources of revenue other than property taxes, particularly liquor licenses and profits.

Table 6—*Net Returns and Property Tax Liabilities of Farm Property Compared with Corporation Stock Owned in Maryland.*

Kind of Property	Year*	Net Returns†	Property Tax Liability‡	Ratio of Taxes to Net Returns Before Taxes Are Deducted (Per Cent)
Farm Property	1929	$59,944,000	$4,770,472	7.4
	1932	36,013,000	3,162,037	8.1
Corporation Stock	1929	97,982,000	2,385,000§	2.4§
	1933	39,650,060	1,620,000§	3.9§

*Early year the one of highest return; later year the one of lowest return.

†In the case of farm property—estimated to be one-half of cash income (receipts) plus non-cash farm use value of $400 per farm for 43,000 farms in 1929, and $300 per farm for 44,000 farms in 1932.

In the case of corporation stock—the dividends from such stock reported for Federal income tax purposes, plus 10 per cent addition estimated to be received by those not reporting net income for Federal tax purposes.

‡State and local property taxes.

§Property tax liability of all securities taxable in Maryland, which includes corporation bonds and other evidences of debt. If these bonds and other evidences of debt are excluded, the amount of tax liabilities against corporation stock would be materially reduced. Data presented in the tax report of this committee in 1934-35, page 7, show that, of $110,000,000 of decedents' estates, about 50 per cent of the taxable intangibles consisted of corporation stock. Based on this data, it would appear that the real tax liability against corporation stock is one-half the amount shown in the table, as follows:

Year	Tax	Tax as Per Cent of Return
1929	$1,192,500	1.2
1933	810,000	2.0

However, inasmuch as about one-half of the corporation stock held by individuals in Maryland is stock of Maryland corporations and, therefore, not taxable under our property tax laws, the income from such stock would reduce the net return figures from corporation stock to about one-half the stated amount, which would in effect make the 2.4 and 3.9 per cent ratios hold good for comparable purposes.

While no definite fixed tax rate can be prescribed for all counties, due to differences in assessment ratios and in public needs, it is a fair

assumption that farm property should not be subject to a tax rate greater than $1.00 per $100 of market value for local governmental services.

County taxpayer associations and committees on efficiency and economy can be effective instruments for placing facts before taxpayers and, thereby, keeping the tax rate at a minimum. In this connection thought should be given to making public the proposed budget or tax levy a month or so before the levy is made, so that interested groups may have an opportunity to scrutinize the levy items.

Fiscal Year and Financial Statements of Governmental Units

Closely associated with economy and efficiency in government is the matter of greater uniformity in fiscal years. Better working relationship can exist between units of governments if they are operating under the same fiscal period. This is becoming more important in view of the increase in amount of subventions, grants, and transfers from one unit of government to another. Under our present system, property may be subject to different debts of finalities, interest, penalties, etc., on account of the states, counties and cities having different fiscal dates. If there are no real or prohibitive reasons for differences in fiscal periods, the most practical fiscal year should be selected for all units of government.

It is the thought of this committee that knowledge of the financing of units of government should be available to the public. We recognize the fact that most units and agencies are now required to prepare and publish a financial report, but we also believe that the many systems used in making such reports prevent the public from fully comprehending the facts which they are supposed to convey.

Accounting of governmental funds should be largely for factual purposes. No system of public accounting need be so comprehensive as to exceed the ability of the officials or the comprehension of the public. To that end we recommend that some simplified system of accounting and recording for units of government be developed. The following major facts should be set forth in such a public record; varying in detail and complexity according to the needs or sizes of the unit:

1. Resources or assets, showing the present value of public property, the sinking funds, uncollected taxes, cash, etc.
2. Liabilities, showing the character of the bonds, notes or bills outstanding, orders not paid, facts about refunding of debts, etc.
3. Cash receipts from taxes, non-tax revenues, subventions, grants, tax certificates, etc.
4. Disbursements:
   a. Cash disbursements, subdivided at least into the following cost classifications:
      1. Administration
      2. Law and order
      3. Education

4. Highway and streets
5. Public health and welfare
6. Debt
7. Transfers to other units

b. Non-cash disbursements, such as notes and warrants issued and for what purpose.

5. Cash balance at beginning and end of year.

RELIEF PROGRAM

Certain future obligations will be placed upon governments in caring for social welfare needs. It seems proper to consider the relief program, at least in part, as a permanent responsibility upon the government. At the same time we recognize that certain policies must be adopted in order to reduce the general public assistance and relief cost to a minimum of necessity.

Total expenditures for the relief program in Maryland, for the fiscal year ending in 1938, approximate $9,600,000. Of this amount, the Federal government contributed $3,400,000, the State $3,800,000, and the local governments $2,400,000. Under the present program the counties and Baltimore City are required to levy one cent on the general property tax rate for aid to dependent children, a sufficient amount of taxes to contribute one-sixth of the cost of the old age pensions, and 35 per cent of the cost of aid to the blind. In addition, 20 per cent of the cost of administration is charged to each of the counties.

The above mentioned items of general public assistance constitute a very definite and continuous charge upon public agencies; yet they impose a variable burden upon the counties, ranging from 2.7 cents to 13.5 cents on the county property tax rates, or an average of 4.7 cents for the counties, and 4.6 cents for Baltimore City.

Direct relief costs, that is, aid to the unemployable from ages 16 to 65, are of still greater variation (from the standpoint of needs and costs) among the various counties and Baltimore City. Many of the counties contribute nothing to this part of the program, and are not called upon to use their proportion of the present state distribution for that purpose. The average amount spent by counties and the State in 1938 was equivalent to a 4-cent tax rate for the counties, and a 13.5-cent tax rate in Baltimore City.

Relief taxes levied by the State, beginning June 1, 1937, produced $3,776,578 in the year ended May 30, 1938. During the fiscal year, October 1, 1937, to September 30, 1938, they produced $3,705,589, indicating a decline of such revenues during 1938 as compared with 1937. Costs of collecting the revenues ranged from 1 to 21 per cent and averaged 6 per cent.*

*Costs of collecting the State revenues, combined with the State's share of the administrative costs of the relief program ($455,993) totaled $690,481, or about 20 per cent of the State revenues for relief purposes.

Table 7—*Revenue Receipts Collected by the State Government of Maryland for the Relief Program,* 1937-38.

Kind of Tax	Estimated for Legislature 1937	Year of June 1, 1937, to May 30, 1938	Fiscal Year Oct. 1, 1937 to Sept. 30, 1938	Cost of Collection	Cost of Collection as Per Cent of Revenue for the Year ended May 30, 1938
Admission tax	$ 225,000	$ 239,760	$ 231,661	$ 47,744	19.91
Beer tax	750,000	843,773	810,282	19,591	1.65
Cosmetics tax	125,000	160,441	143,228	34,125	21.27
Income tax	1,000,000	978,714	1,012,234	56,417	5.76
Motor Vehicle titling tax	500,000	497,768	397,645	5,124	1.03
Music box tax	No estimate	53,546	59,682	†	†
Pinball machine tax	175,000*	233,663	339,598	14,988	5.22
Recordation tax	225,000	221,776	250,730	4,876	2.20
Reregistration tax	215,000	205,158	205,158	51,623	12.58§
Whiskey manufacturing tax	420,000	341,980	255,371	‡	‡
Total Gross Revenue	$3,685,000	$3,776,578	$3,705,589	$234,488	6.21
Total Net Revenue		$3,542,090	$3,471,101		

*Estimated on basis of $25 license fee for 5 or more playing machines; legislation imposed $35 license fee on such machines.

†Included in pinball machine tax collection cost.

‡Included in beer tax collection cost.

§One-half of cost credited to one year collection as revenue is collected in one year but applied to two years of program.

Certain steps may be taken to put the relief program on a more equitable basis, and also make it a definite part of the State and local budget responsibilities. To that end, we recommend that the State relief program be a part of the State budget. We also recommend that the program, for financial support on the part of the State and local governments, be divided into two phases:

1. That part of the program dealing with old age pensions, aid to dependent children and aid to the blind to be supported as follows: A county (and Baltimore City) tax levy of not over 4 cents on the general property tax rate in 1940 and 5 cents in 1941, providing that each county shall levy sufficient amount to carry the necessary program; with the State contributing, from State revenue, out of an equalization fund, the necessary amount above the 4 and 5 cent local levies, combined with the Federal contribution, to provide for needed expenditures.

2. That part of the program dealing with direct relief to unemployables, to be supported jointly from State and local funds on the following basis: That the State be required to match the local funds for such purposes to an extent of at least one-half of one cent but not exceeding 2 cents equivalent on the general property tax in the Counties, and 5 cents on the tax rate in Baltimore City; the remaining amount necessary for direct relief to be levied by the local governments upon the property tax and be administered by the Welfare Boards rather than the County Commissioners.

Table 7a—*Approximate Local Tax Rate Equivalents Levied for the General Relief Program of Maryland,* 1937-38.

(Includes old age pensions, aid to dependent children and the blind, but excludes direct relief.)

County	County Tax Rate Equivalent (Cents)
Allegany	5.68
Anne Arundel	4.40
Baltimore	2.71
Calvert	8.13
Caroline	8.30
Carroll	3.70
Cecil	4.22
Charles	9.10
Dorchester	7.01
Frederick	4.40
Garrett	10.80
Harford	2.92
Howard	4.68
Kent	5.42
Montgomery	3.04
Prince George's	3.13
Queen Anne's	5.90
St. Mary's	7.89
Somerset	13.54
Talbot	5.70
Washington	5.53
Wicomico	4.30
Worcester	8.11
All Counties	4.72
Baltimore City	4.57

It is quite important that the increase in cost of general public assistance and the direct relief program does not result in an ever increasing property tax contribution. For the next three years an increasing amount seems necessary for old age pension requirements, due principally to the fact that the program to date has not adequately cared for qualified applicants, thus creating a waiting list, and to the fact that, during the next few years, an increasing per cent of the population will be of age 65 or over. This is the principal reason for an increase in the amount required for 1940 over the 1938 program, and for 1941 over 1940. The approximate anticipated financial requirement based in the above recommendation will be as follows:

	1940	1941
General Program of Old Age Pension and Aid to Dependent Children and the Blind (including administration):		
Cost to local governments	$ 764,750	$ 964,250
Cost to State	4,446,000	4,902,000
Sub-Total	$5,210,750	$5,866,250
Direct relief program for Unemployables (including administration):		
Cost to local governments*	$ 750,000	$ 750,000
Cost to State†	750,000	750,000
Sub-Total	$1,500,000	$1,500,000
Summary:		
Cost to local government*	$1,514,750	$1,714,250
Cost to State government	5,196,000	5,652,000
Total	$6,710,750‡	$7,366,250‡

*Plus any amounts as the counties or Baltimore City see fit to levy for direct relief over and above the local tax rate of 2 cents for the counties and 5 cents for Baltimore set for state matching.

†For matching local contribution not to exceed 2 cents equivalent on the county tax rates and 5 cents on the Baltimore City tax rate.

‡These totals compare with a total of about $6,000,000 in 1938; of which $3,900,000 was contributed by the State and $2,100,000 by the local governments.

We feel that the above general suggestion, the details of which can be worked out, will furnish a basis for the restriction of property tax levies for relief, level out the burden of such costs similar to the results obtained through equalization for school purposes, and at the same time give local control and participation in the most variable parts of the program.

HIGHWAYS

The highway improvement problem in the State of Maryland has reached the stage largely of two dimensions; one being the increasing need for improvement of the main arterial highways; and the other being a decided need for farm-to-market or feeder roads. The secondary highway system appears to be in a relatively good condition at the present time.

It is obvious that a change in the present financial policies in respect to highways be made, although at present the law prohibits the Governor in preparing the budget, from diverting any of the highway revenues for purposes other than highways. It is quite possible that the Legislature might change this position, with the result that diversion would be continued for another period.

Maryland farm organizations have always opposed the diversion of highway funds from road use to other purposes, the amount of such diversion being approximately $3,700,000 per year. This practice not only endangers the welfare of the highway needs of the State, but it also permits the State to enter into intricate and fiscal policies that do not constitute good state financing, and it provides a possibility for losing Federal Government highway aid. This committee recognizes that the highways are a capital investment of the State and local governments, and as such are productive of many economic and social advantages. We deplore the fact that the whole road system has been improperly maintained, thereby decreasing its efficient usage, and little recognition has been given to the fact that replacements are necessary if the highways are to be put on a sound business basis.

In the opinion of this committee, the present revenues are sufficient to carry a normal program of highway maintenance and replacement in the State, aside from those major projects such as large bridges and dual highways or parkway construction projects. Such construction projects, requiring a large investment per mile, must be financed in some way other than from present highway revenues or State bond issues payable from general property tax, if they are not to jeopardize the adequate financing of the rest of the system. This Committee suggests that as much as $2,500,000 of a total net highway revenue of $14,000,000 can be profitably used, and should be used, upon the county highway system. A prepared annual budget for highway purposes follows:

Net highway revenue (excluding Federal Aid)		$14,000,000
Revenue to be divided for following usage:		
State Roads Commission debenture—debt service	$	600,000
Cost of collection, Police Department Commission of Motor Vehicle Office and Baltimore Traffic Court		900,000
Sub-Total		$ 1,500,000

Applied to account of Baltimore City—20% of balance of $12,500,000 (for streets and highways only)	$ 2,500,000
Applied to accounts of Counties—20% of balance of $12,500,000 (for roads only)	2,500,000
Applied to accounts of Incorporated Towns—4% of balance of $12,500,000 (for streets and highways only)	500,000
Total of accounts to civil division	$ 5,500,000
Amounts available to the State Roads Commission for use on State Highways	
For overhead and maintenance	$ 2,000,000
For construction	5,000,000
Total for State	$ 7,000,000
From Federal Government	1,000,000
Total to State Roads Commission	$ 8,000,000

If county roads and local streets are under the jurisdiction of the State Roads Commission as to maintenance and construction, the determination of where and how maintenance and construction should proceed could rest more on the authority of local officials than under the present laws.

Regardless of the body responsible for the expenditures of local funds, records of such expenditures should be so kept as to inform the public regarding the amount spent in each county for overhead, maintenance and construction.

If State highway funds are placed in the hands of local officials for maintenance and construction of local roads, we offer the following alternative suggestions:

1. That the County Commissioners, acting in the capacity of road engineers, have full responsibility for expenditures of county road funds, or—

2. That a county engineering department, headed by a civil serviced, and qualified engineer, carry out the details of road policies determined by the County Commissioners; in which case two alternatives could be selected:

   a. Engineers office would have care of roads and streets only, but no county, or counties jointly, would have an engineering department unless they had approximately 1,000 miles of county roads under county supervision.

   b. Engineers office would have the care of roads and streets, and, in addition, other public property, drafting work necessary for tax map making, and assist the Supervisor of Assessments in determining valuation of corporation real estate, equipment and machinery for assessment.

If counties take over maintenance and construction of county roads, road equipment costs necessary for county road work should be supplied from the following sources, either in one year or over a period of years:

1. Fifty per cent from the counties' allotment for road maintenance.*
2. Twenty-five per cent from the counties' allotment for road construction.*
3. Twenty-five per cent from a direct county levy.

If a sum of $2,500,000 is made available for county road purposes, as much as $1,000,000 of that sum could be used for construction of farm-to-market roads. By using as much as 40 per cent of such $2,500,000 plus matching by local taxes, an annual fund of $2,000,000 could be made available for low cost improvement of county dirt roads; thereby improving, at the rate of $5,000 per mile, about 400 miles per year. In 15 years the most important dirt roads would be improved, a mileage equivalent to about two-thirds of the existing unimproved miles of roads. We are of the opinion that there is justification for the expenditure of a part of State funds allocated to the Counties to provide low cost farm-to-market roads. Farmers contribute about $1,250,000 annually to State highway revenues.

We believe, however, that if a portion of such funds are used for construction, a limitation should be placed on the per cent of state allocation which could be used for construction. Furthermore, the use of such funds for construction, should be matched by either a direct levy by the county, or by a bond issue requiring no more annual levy, for a period not exceeding twenty years, than if levied direct. The county levy required for such a program would not exceed an average of 8 cents on the tax rate. By 1941 the present county road debt in most counties will have been paid off, thereby permitting counties to levy for road purposes without materially increasing the tax rate. In lieu of using such State funds for construction, the counties may be permitted to use their allotments for payment of annual county road debt charges on road bonds issued since 1926.

The order of improvement of such local roads should be determined largely on the basis of the volume and nature of traffic and the condition of the road. Such improvements would have the following beneficial results to rural communities and to the State at large:

1. Facilitate year-round marketing opportunities.
2. Economy in operation of motor vehicles and saving of time.
3. Increase or maintain farm values and subsequently the taxable basis.
4. Greater accessibility of schools, churches, hospitals, etc., especially during the winter season, to one-half of the rural population.

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*From assumed apportionments of motor vehicle revenues.

5. Equalize the farmers' tax contribution for highways more in proportion to the benefits from highways.
6. Add to the contentment and happiness of rural people, who constitute one of the basic economic groups in the State as well as a source of surplus population.

In view of the satisfactory results obtained from the use of convict labor in other states, and in Maryland where such labor has been so used to a limited extent, we recommend that convict labor be used on road construction and improvement as well as road maintenance in other counties.

ASSESSMENT OF PROPERTY

The present state debt requires an annual tax revenue in excess of the amount that can be raised from the full rate property tax levy upon the total state assessable basis. This situation has made it necessary for the State to use the tax on securities, as well as a substantial part of the inheritance tax and a part of the motor vehicle revenue, to contribute to the annuity bond fund.

To finance state debts by a fixed tax rate against a changeable tax base may have a definite effect upon the policies of property assessments. To carry out the letter of the law, shrinkage of the total base, upon which a given tax rate is designated for debt purposes, would impare the credit of the State.

In this State each bond issue has an annuity bond account. Therefore, some of the older bond issues may have accumulated a surplus account due to an increasing taxable basis since the issuance of the bond. This would necessitate the levying of a lesser tax rate for that particular bond issue than is prescribed in the legislative act authorizing such issue. On the other hand, it may become necessary for the State to levy a greater tax rate than is stipulated in the authorizing act, because of the shrinkage in the taxable basis since the bonds were issued.

This committee is of the opinion that there is too little margin between the property tax debt requirements and the amount of revenue that may be forthcoming from a certain tax rate on the total State basis. This situation, combined with the hesitancy to increase the rate, encourages the perpetuating of existing assessments with attending inequalities, unless there is absolute certainty that the reassessments would result in an increase in the basis.

Such postponements of reassessments defeats the purpose of a reassessment and violates the constitutional and statutory laws of the State as well as the fundamental principles of taxation. We are of the opinion that the State debt should not take such a proportion of the property tax as to modify the effective and proper administration of reassessment laws.

The purpose of reviewing property for assessment is to protect the individual property owner against unequal distribution of the property tax burden. If that protection to each property owner is to be guaran-

teed, it is important that the authorized assessing bodies keep constant watch over assessments and make adjustments whenever needed. Equalization within the counties should be a concern of the State even though there is no State property tax.

Thus, for a period of 8 to 10 years, a substantial proportion of our farming property has been over-assessed and grave injustices have resulted. During this period, farm real estate decreased in value 30 percent, with only a slight recent recovery. The assessment on farm real estate and tangible personal property remained at the assessed values of 1927-28, except where livestock and machinery failed to be placed on the assessment books, or where reductions were allowed or increases made. On the other hand, intangible property has widely escaped the property tax through evasion; and the practice of assessing such property every year has given it the advantage of changes in market value, in contrast to real estate and tangible personal property. In addition, intangible property is subject to a tax only if it pays a dividend, while real estate is subject to a tax regardless and is subject to tax sale in case of default of payment.

This committee is of the opinion that such tax discrimination in the favor of intangible properties serving as an alternate form of investment from which normal and comparable returns are a matter of long determined fact, results in the unfair taxation of real estate. Furthermore, there are many corporations chartered in Maryland, the stocks of which are exempt from taxation, in the hands of residents of Maryland, yet these corporations may pay little or no real or personal property taxes in the State.

Farmers have not pressed their rights for many reasons, among which are inertia, lack of cooperation, and a disposition to take unfair treatment without complaint. This committee recognizes that advancements have been made in assessment technique in other states and urges the State Tax Commission to adopt such measures as are applicable and worthwhile in this State. We are also mindful that there has been adopted, in one county, an assessment procedure which should represent a decided improvement over methods used elsewhere, if carried out according to the purpose and intent of the law. The continuing method of assessing by a permanent assessing board in Frederick County should be a step in the right direction, if aided by scientific technique.

Data presented in last year's report of this committee showed unequal assessments of farm property to prevail among the counties; the ratio of assessments to sales values ranging from 81 to 142 per cent. A study of farm property assessments within individual counties shows that still greater inequalities exist among election districts and between farm land and buildings. Inequalities also exist between urban and farm real estate, in one county farm property being assessed an average of over 90 per cent of value, as compared with less than 60 per cent for urban properties.

This committee finds that in many counties woodland is assessed almost uniformly at one rate per acre throughout the county without regard

to age or condition, and that land of variable quality in individual farms is assessed at uniform rates. We have also observed the practice of assessing farm building to agree closely with the cost of construction rather than the value they add to the farm land.

The following conditions are largely responsible for the present inequalities in the assessment of farm properties:

1. Poor original assessment.
2. Changes in condition of land, growing timber, or buildings.
3. Change in use of land, or in type of farm enterprise.
4. Increasing differences in farm values produced by kind of road.
5. Road improvement without accompanying increases in assessment.
6. Decreases allowed in assessments upon complaint of taxpayer.
7. Escape of personal property from the tax rolls, especially livestock.
8. Practice of using the construction or replacement cost of the buildings as a basis for assessment.

Reassessments were completed in six counties during 1937 and 1938, another county is nearly completed, and the eighth county is in the process of reassessing over a period of four years. Table 8 shows the changes made by reassessing in those counties. No considerable change resulted in the total assessable basis of two counties, while in five counties increases of from 4 to 14 per cent were obtained, such increases being largely on urban properties. Generally speaking, there was a tendency to increase the assessment on buildings and tangible personal property.

Table 8—*Changes in Total Assessment Against Real and Tangible Personal Property by Reassessment in* 1937-38.

County	Before 1937-38 Reassessment	After 1937-38 Reassessment	Increase	Per Cent Increase
Anne Arundel	$48,967,790	$51,507,801	$2,540,011	5.19
Caroline	13,208,668	13,288,462	79,794	.60
Frederick*	2,664,780	2,708,540	43,760	1.66
Garrett	17,774,460	20,205,598	2,431,138	13.68
Kent	15,326,925	15,955,315	628,390	4.10
St. Mary's	8,670,285	9,062,516	392,231	4.52
Wicomico	22,882,881	25,760,382	2,877,501	12.57

*Two election districts only.

A sample analysis of changes made on the farm real estate in three of the counties indicates that, for the most part, some slight decrease resulted in the reassessment of land; but this decrease was at least partially offset by an increase in the assessment on buildings. Indications are that an increase in tangible personal property on farms resulted from the reassessment, with the results, in so far as farm property is concerned, of practically no change in total farm property assessments. In one district, changes on individual farms were made in less than 50 per cent of the cases, whereas, in other districts most of the farms showed some change in assessments but the net effect was substantially small.

Approximate costs of making the reassessment in four of the counties are as follows:

County	Approximate Number of Real Estate Properties	Cost of Reassessment
Anne Arundel	30,000	$40,000
Caroline	4,467	6,682
Kent	3,604	8,798
Wicomico	8,273	13,621

This State is in need of better laws concerning the assessment of farm as well as other property. We recommend that the present property tax laws dealing with the assessment procedure be repealed and reenacted for the purpose of greater sequence and clarification, and for more definiteness as to who has power to originate and make reassessments, and under what conditions and upon what basis a reassessment can be initiated. In this connection we feel that a reassessment should not be conducted arbitrarily at designated intervals, but should take place when sufficient inequalities exist to warrant such reassessment. We also believe that personal property might be reassessed more often than real estate and that the exemption of any kind of private property tends to produce greater inequalities in property assessments.

This committee also recommends that a general reassessment be made in those counties where such did not take place in 1937-38, and we further recommend that the number of local assessors be reduced to a number that can be efficiently supervised, yet not prevent the preparing of the new basis for the next year's levy.

To the end that the above mentioned desirable changes shall take place in our property tax system, we recommend that the Governor of this State appoint a committee or request some research body to make a study of the existing property and other tax laws and practices, with the objective of introducing such changes that are desirable and feasible and that will produce greater equality in tax burdens among the various classes of properties according to their worth and returns to individuals.

ADDITIONAL STATE FINANCING

Additional state revenues must be found to prevent the diversion of motor vehicle revenues; to supply the needs of a relief program, the accrued responsibilities of the State in respect to the teachers retirement fund, the standardization of salaries, and the increasing cost of many of the State institutions. We are conscious of the fact that the State revenue system must be expanded if the State government is to proceed on a "pay as you go" basis. To attempt to solve this problem by a process of nibbling generally results in an unbalanced budget.

In this connection we are unalterably opposed to any increase in the State property taxes for the above mentioned purposes. In 1929, only five states had no state real estate tax, but by 1936 fourteen states had no such taxes. Since 1929, the State tax rate in those states retaining such a property tax has been definitely downward. Most of our adjoining states are depending largely upon state revenues other than the property tax, while the State of Maryland is depending relatively more on property and capital taxes. As the local governments' source of revenue is largely confined to real estate and personal property taxes, we feel that there is justification for the elimination of the state property tax. We not only oppose any increase in the State property tax; we also oppose the issuance of future State bonds payable from a property tax levy. By the latter means the State property tax can be finally eliminated.

The present financial dilemma (other than the responsibilities of the State regarding a relief program) of the State is due largely to the following facts:

1. Rapid decline of revenue receipts following the onset of the recent depression. Such receipts dropped materially under the estimated revenue which is so difficult to forecast two years in advance.
2. An increasing drain upon the existing general fund revenues, by dedicating such for certain purposes or committing such for State debts, without replenishing such funds with additional revenues.

Table 9 shows how the State tax revenues for the support of the general government fund (which includes most of the State tax revenue except motor vehicle revenues) have changed since 1930. It is quite obvious, in view of the additional services of State government and the possibilities of decreasing revenue returns from existing sources, that this State needs to practice economy in every branch of the government. Furthermore, we believe that the organization of State boards and departments can be simplified in the interest of efficiency and economy, and that all state salaried employees should be full-time employees or else receive compensation according to the time devoted to their duties.

Table 9—*Trend of State Tax Revenues for General and Committed Purposes.**

Year	Motor Vehicle Revenues		Tax Revenues other than Motor Vehicles		
	Total Revenues	Total Committed to Road Funds	Total Revenues	For General Fund	Revenues Committed for Special Purposes
1930	$10,318,906	$10,318,906	$14,649,346	$11,752,987	$3,896,359
1931	11,024,574	11,024,574	15,345,091	11,193,073	4,152,018
1932	11,717,364	11,631,634	14,747,321	11,032,440	3,714,881
1933	10,446,646	10,446,646	13,790,607	10,068,165	3,722,412
1934	11,636,925	11,487,946	14,096,894	8,759,638	5,337,256
1935	12,084,374	11,936,203	13,593,477	8,848,026	5,745,451
1936	12,895,706	9,556,116	14,846,463	8,537,826	6,308,637
1937	14,333,121	11,005,036	16,355,388	9,575,773	6,779,015

*Other than taxes for relief program. All data preliminary.

This committee suggests that the State budget be presented in a more understandable manner, setting forth the following facts, so that the people can know what the true State government costs are, in terms of State taxes, in contrast to the other funds received and disbursed through the State Treasury:

1. Revenue receipts from the following sources, for general or committed purposes, be designated as:
   a. Current state taxes, fees and licenses which represent the public contribution through state taxes for state purposes.
   b. Borrowings payable from future taxes.
   c. Earnings of State departments and boards, including revolving funds and amounts contributed by other units of government of the State.
   d. Grants and subventions from Federal government.
   e. Miscellaneous revenues.
2. That functional disbursements be clearly set forth according to whether such are from general or committed funds.
3. That grants, aids and transfers to or from local governments should be so designated as to prevent overlapping costs from appearing in governmental statements.
4. That the total budget of the offices of Clerks of the Circuit Courts, and the Register of Wills, except the county contribution to such offices, be included in the State budget.*

*The costs of these offices include fees collected and commissions on taxes that are used toward the support of these offices. Such costs approximate $1,000,000, including from $100,000 to $150,000 of commissions on inheritance taxes retained by the Register of Wills offices.

Before suggesting additional state tax revenues, it may be well to consider the possibility of more fully utilizing the tax resources now used by the State. We believe that the full utilization of the existing tax resources would help to make the property tax program more effective and equitable.

The probable additional needs of the State other than those now supporting the regular State biennial budget are as follows:

	1940	1941
Restoration of motor vehicle revenues for highway purposes	$3,700,000	$3,700,000
Relief program	5,196,000	5,642,000
Cost of administering new tax laws	250,000	250,000
State teachers' retirement fund	600,000	600,000
Net increase in departmental and institutional operating costs	100,000†	100,000†
Total	$9,846,000	$10,292,000

†After effecting economies of $500,000 in existing expenses.

This committee prepared a dozen careful estimates of revenues that could be obtained from a net income tax on individuals in Maryland. Such estimates were based on data of individual returns for 1937 furnished by the State Comptroller's office. The estimates varied from $3,500,000 to $7,500,000, with rates graduated from 1 to 6 per cent with various exemptions.

This committee recommends that the Legislature provide for another referendum on a graduated income tax amendment, such referendum to take place in 1940. In many states more than one referendum on proposed income tax amendment was held before being ratified.

Inasmuch as the proposed graduated income tax amendment failed to receive a favorable vote by the electorate in 1938, this committee recommends the following revenue sources from which the State should derive any additional revenue for each year of the next biennium*:

Admissions tax, at present rate	$ 250,000
Beer tax, at $1 per barrel	1,000,000
Cosmetics tax, at present rate	150,000
Motor vehicle titling tax, at present rate	400,000
Pinball machine and music box license fee, at present rates	400,000
Recordation tax, at present rate	250,000
Whiskey manufacturers' tax, at present rate	200,000
Net income tax on individual incomes at 2½ per cent rate, with exemptions of $1,000 for a single person, $2,500 for a married couple, and $400 for each dependent	3,100,000

*All estimates preliminary, subject to revision.

Net income tax on corporation incomes at 1½ per cent	900,000
Tax of 5 per cent on incomes from intangibles	4,000,000
Total	$10,650,000
Less elimination of 15 cent state tax rate on intangibles	800,000
Net probable revenue	$ 9,850,000

This State is in need of a non-partisan research body, as a division of some existing state agency, that could give its efforts toward an analysis of fiscal and governmental problems of State and local governments in Maryland. Constant demand is placed upon some State department, or upon appointed committees, for the assimilation and analysis of factual information that will lead to recommendations. A properly organized research body can be assigned these tasks from time to time, and we recommend that such a body be created by the next Legislature, with an appropriation of about $25,000 per year, the employees of such body to be under civil service.

DEBT

This committee is definitely opposed to a continuation of issuing state bonds for expenditures essentially current in nature. The state cannot afford to issue additional bonds in any large amounts at the present time, and, when such issues are necessary, the debt service cost should rest upon some tax revenue other than the property tax.

In general, the debt position of most local governmental units in Maryland is quite satisfactory and does not impair the current operations of government. However, it is well to guard against the future misuse of public credit. To this end we recommend that official and civic bodies give consideration to the various aspects of the debt problem with the view of formulating the best debt policies into proper legislation.

The amount required for interest and redemption on State bonds for the fiscal years 1940 and 1941 are as follows:

	1940	1941
Real and personal property tax	$5,305,431*	$5,402,598†
Inheritance tax	767,652	773,502
	$6,073,083	$6,176,100

Whereas, in 1934, the State debt required less than 60 per cent of the general property tax, including the securities tax, it now requires all of the property tax, about $750,000 from the inheritance tax, and a small amount from the gasoline tax.

*Includes $800,000 tax on securities (estimated).
†Includes $800,000 tax on securities (estimated).

Thus, while it is true that the State debt has not resulted in an increase in the State property tax, it is also true that more and more of the revenues formerly going to the support of the general governmental functions, other than debt, is being used for State debt purposes.

SUMMARY AND RECOMMENDATIONS

1. Despite the fact that farm real estate taxes are about twenty-two per cent less than the peak of 1928-29, this committee believes that a more comprehensive and equitable application of the general property tax would produce greater equality and lessen the burden on farm real estate. We recommend that further study be given to the inequalities and limitations of our property tax system to the end that all properties be equitably subjected to property taxation according to some measurement of social or economic worth.

2. Financial statements and reports of governmental units are for the purpose of presenting facts about the financial condition of governments. We observe that, because of variable accounting methods and classification of receipts and expenditures, such financial statements are not readily understood by the general public. We, therefore, recommend that units of governments adopt uniform methods of accounting whenever practicable; and we also recommend that consideration be given to the possibility of having the same fiscal year for all units of governments.

3. Definite responsibility is placed upon the State and local governments by reason of certain public welfare needs, particularly in respect to old age assistance, aid to dependent children, and aid to the blind and unemployables. To meet these public obligations, we recommend that an equalization program involving joint support by the State and local governments, such as contained in the body of this report, be adopted.

4. Preservation of the economic and social resources and life of our State in both rural and urban areas is of paramount importance. To that end, we believe that our present highway revenues should be first applied to the proper maintenance and improvement of those roads and streets which are predominantly local and intra-state of usage (except where it is necessary to match Federal funds). Highway improvements involving a large capital outlay per mile, and whose need is occasioned by a large per cent of out-of-state traffic, should be financed in some manner other than the present highway revenues or property taxation. We recommend that a part of the present state highway revenues, matched by local tax levies, be used in a planned program of annual improvement of local dirt or earth roads.

5. Many conditions have been responsible for the present inequalities in property assessments between and within counties. These unequal assessments should not longer exist. We, therefore, request the coming Legislature not to postpone the reassessment due to be made in fifteen counties in 1939. We also recommend that the laws relating to the

assessing of property be revised for the purpose of greater clarification and definiteness as to authority and procedure for assessing, and for the purpose of introducing improved methods of assessing.

6. Sufficient tax revenue for restoring diverted motor vehicle revenues, for relief and other purposes, will necessitate an increase in state tax levies. However, we should first make every possible economy in all expenditures.

We believe that the net income tax best fits the needs of our state tax system. Failure to approve the proposed graduate income tax amendment makes it necessary to resort to a flat rate income tax, together with existing special relief taxes. We therefore recommend, as sources of revenue for additional budget and for relief requirements for the next biennium, the following:

a. In income tax of 2½ per cent on net incomes of individuals.

b. An income tax of 1½ per cent on net incomes of corporations.

c. A 5 per cent tax on incomes from intangibles—with the 15-cent state tax rate on intangibles eliminated.

d. Continuation of the present tax on amusements, cosmetics, pinball and music machines, recordation of documents, titling of motor vehicles and the manufacturing of whiskey; and an increase in the tax on beer to $1 per barrel.

We also recommend that a referendum on the graduated income tax be provided for the election in 1940.

7. While it is necessary for units of government to borrow from time to time, we believe that proposed bond issues should be more carefully considered. We are opposed to further state bond issues serviced from the general property tax.

This report is respectfully submitted by the Joint Tax Committee of the Maryland State Grange and the Maryland Farm Bureau Federation.

D. G. HARRY, *Chairman.*
C. E. WISE, JR., *Secretary.*
J. H. BLANDFORD.
CHARLES I. BOYLE.
T. ROY BROOKES.
S. H. DEVAULT.
A. G. ENSOR.
A. M. ETZLER.
ED. HOLTER.
H. H. NUTTLE.
HOMER REMSBERG.
T. B. SYMONS.
P. C. TURNER.
PAUL WALKER.
R. C. F. WEAGLEY.

APPENDIX

Exhibit A—*County General Tax Rates Applied to Farm Real and Tangible Personal Property Assessed Valuations, Maryland,* 1928-29 to 1938-39.

County	1928–29	1929–30	1930–31	1931–32	1932–33	1933–34	1934–35	1935–36	1936–37	1937–38	1938–39
Allegany	$1.47	$1.47	$1.47	$1.57	$1.50	$1.20	$1.25	$1.42	$1.50	$1.55	$1.50
Anne Arundel	2.19	2.33	2.43	2.43	2.32	1.81	1.81	1.81	1.89	1.90	2.10
Baltimore	1.65	1.65	1.75	1.65	1.75	1.18	1.18	1.26	1.45	1.49	1.40
Calvert	2.04	2.11	2.34	2.34	2.00	1.50	1.10	1.35	1.70	1.35	1.35
Caroline	1.65	1.65	1.75	1.50	1.30	.73	.98	1.08	1.07	1.23	1.22
Carroll	1.65	1.80	1.65	1.65	1.60	1.00	1.00	1.10	1.10	1.05	1.00
Cecil	1.42	1.40	1.30	1.30	1.20	.95	.80	.78	.78	.83	.92
Charles	1.40	1.43	1.40	1.35	1.25	1.00	.90	1.15	1.10	1.10	1.10
Dorchester	1.80	1.80	1.80	1.80	1.70	1.05	1.00	1.00	1.22	1.12	1.00
Frederick	1.29	1.30	1.30	1.30	1.20	.90	.90	.95	1.00	1.05	1.00
Garrett	1.90	1.83	1.80	1.77	1.60	1.06	1.00	1.00	1.00	.85	.88
Harford	1.50	1.45	1.45	1.45	1.30	.95	.95	.95	1.00	1.08	1.08
Howard	1.69	1.71	1.74	1.63	1.49	1.00	.95	1.00	1.15	1.15	1.15
Kent	1.54	1.90	1.63	1.67	1.47	.93	.84	1.21	1.20	1.52	1.35
Montgomery	1.30	1.30	1.30	1.30	1.30	1.04	.90	1.50	1.50	1.50	1.50
Prince George's	1.30	1.36	1.35	1.52	1.49	1.08	.99	1.00	1.28	1.23	1.18
Queen Anne's	1.50	1.50	1.50	1.50	1.37	.88	.78	1.00	.90	.80	.70
St. Mary's	1.63	1.51	1.43	1.55	1.49	.94	.92	1.00	1.00	1.05	.75
Somerset	1.95	1.85	1.65	1.75	1.60	1.00	.98	1.20	1.20	1.30	1.45
Talbot	1.46	1.46	1.46	1.46	1.35	.78	.85	.85	.90	1.00	1.07
Washington	1.30	1.30	1.30	1.30	1.20	.85	.88	.97	1.06	1.07	1.10
Wicomico	1.69	1.73	1.73	1.70	1.45	.95	.88	1.06	1.31	1.28	1.07
Worcester	1.45	1.45	1.45	1.45	1.45	1.00	.95	.95	.95	.88	.75

Exhibit B—*Approximate Assessed Value of Farm Property in Maryland, by Counties,* 1935-36.

County	Assessed Value of Farm Property			Index Used in Weighting*
	Land and Buildings	Tangible Personal Property	Total	
Allegany	$ 4,000,000	$ 250,000	$ 4,250,000	1.3
Anne Arundel	9,540,738	267,374	9,808,112	3.5
Baltimore	28,210,643	2,317,475	30,528,118	9.7
Calvert	2,820,515	171,970	2,992,485	1.0
Caroline	7,105,227	1,000,571	8,105,798	2.7
Carroll	15,205,600	2,500,000	17,705,600	5.9
Cecil	9,000,000	1,500,000	10,500,000	3.5
Charles	5,000,000	350,000	5,350,000	1.8
Dorchester	7,000,000	850,000	7,850,000	2.6
Frederick	21,883,912	3,374,047	25,257,959	8.3
Garrett	7,500,000	300,000	7,800,000	2.6
Harford	12,472,859	1,907,323	14,380,182	4.8
Howard	10,230,747	635,726	10,866,473	3.6
Kent	7,148,187	538,464	7,686,651	2.6
Montgomery	16,923,974	1,054,443	17,978,417	5.9
Prince George's	16,469,303	305,108	16,774,411	5.5
Queen Anne's	9,094,242	1,982,738	11,076,980	3.4
St. Mary's	5,000,000	500,000	5,500,000	1.8
Somerset	5,500,000	400,000	5,900,000	2.0
Talbot	9,545,191	710,004	10,255,195	3.4
Washington	16,448,983	1,344,192	17,793,175	5.9
Wicomico	6,500,000	500,000	7,000,000	2.3
Worcester	5,000,000	750,000	5,750,000	1.9
Total	$237,600,121	$23,509,435	$261,109,556	

*County with smallest total assessed value of farm property, namely, Calvert County, being given a weight of one, the index of the other counties being expressed as multiples of the assessed values of Calvert County.

Exhibit C—*Changes in County Taxable Basis Made by Reassessment of 1937-38.*

County	Total Assessment on Land		Changes in Land Assessment*	
	Before Reassessing	After Reassessing	Increase or Decrease	Per Cent Increase or Decrease
Caroline	$5,765,423	$5,551,068	— $ 214,355	— 3.7
Kent	7,550,000	7,762,650	+ 212,650	+ 2.8
St. Mary's	3,519,897	3,441,032	— 78,865	— 2.2
Wicomico	8,248,971	9,792,798	+ 1,543,827	+ 18.7

*Anne Arundel and Frederick Counties show no separation of land and buildings.

County	Total Assessment on Buildings		Changes in Bldg. Assessments	
	Before Reassessing	After Reassessing	Increase or Decrease	Per Cent* Increase or Decrease
Caroline	$5,604,390	$5,854,324	+ $ 249,934	+ 4.5
Kent	5,821,330	6,016,835	+ 195,505	+ 2.4
St. Mary's	3,659,549	4,261,604	+ 602,055	+ 16.5
Wicomico	11,413,474	12,655,437	+ 1,241,963	+ 10.9

*Anne Arundel and Frederick Counties show no separation of land and buildings.

County	Total As'ment on Real Estate		Changes in Total Real Estate	
	Before Reassessing	After Reassessing	Increase or Decrease	Per Cent Increase or Decrease
Anne Arundel	$47,930,790	$49,585,917	+ $1,655,127	+ 3.5
Caroline	11,369,813	11,405,392	+ 35,579	+ 0.3
Frederick*	2,397,005	2,395,805	— 1,200	— 0.0
Kent	13,321,330	13,779,485	+ 458,155	+ 3.4
St. Mary's	7,179,446	7,702,636	+ 523,190	+ 7.3
Wicomico	20,904,408	23,391,185	+ 2,486,777	+ 11.9

*Only two districts reassessed—Walkersville and Mt. Pleasant.

County	Changes in Tangible Personal Property Total Assessment on Tangible Personal Property			
	Before Reassessing	After Reassessing	Increase or Decrease	Per Cent Increase or Decrease
Anne Arundel	$1,037,000	$1,921,884	+ $ 884,884	+ 85.3
Caroline	1,838,855	1,883,070	+ 44,215	+ 2.4
Frederick*	267,775	213,735	+ 44,960	+ 16.8
Kent	2,005,595	2,175,830	+ 170,235	+ 8.5
St. Mary's	1,490,839	1,359,880	— 30,959	— 2.1
Wicomico	1,978,473	2,369,197	+ 390,724	+ 19.7

*Only two districts reassessed.

Exhibit D—*Changes made in Individual Farm Assessments by Reassessments of 1937 in Three Counties.*

County	Election District	Number of Farms Analyzed	Number of Farms Showing Following Changes in Real Estate Assessment by Reassessment		
			No Change	Increase	Decrease
Caroline	2	56	3	17	36
Frederick	13	46	8	23	15
	26	42	26	8	8
Kent	1	51	1	23	27

Changes in Assessment on Farm Real Estate of Sample Number of Farms in Three Counties by Reassessment in 1937.

County	Election District	Number of Farms Analyzed	Total Real Estate Assessment		Increase or Decrease in Assessment		
			Before Reassessment	After Reassessment	Total	Per Farm Charged	Per Farm All Farms
Caroline	2	56	$269,889	$264,218	—$5,671	—$107	—$101
Frederick	13	46	347,561	341,070	— 6,491	— 175	— 141
	26	42	509,950	512,695	+ 2,745	+ 183	+ 63
Kent	1	51	443,383	422,675	+20,780	— 417	— 407

Relative Changes in Land and Building Assessment of Sample Number of Farms by Reassessment, in 1937.

County	Election District	Number of Farms Analyzed	Assessment on Land			Assessment on Buildings		
			Before Reassessment	After Reassessment	Increase or Decrease	Before Reassessment	After Reassessment	Increase or Decrease
Caroline	2	56	$193,409	$180,093	—$13,316	$76,480	$84,125	+$7,645
Frederick	13	46	257,396	251,720	— 5,876	89,965	89,350	— 615
	26	42	379,780	375,290	— 4,490	130,170	137,405	+ 7,235
Kent	1	51	333,173	309,685	— 20,488	110,210	112,990	+ 2,780

Kent..... 1 51 333,173 309,685 — 20,488 110,210 112,990 + 2,780

Associated Women

OF THE

Maryland Farm Bureau

January 11, 1939

The meeting of the Associated Women of the Maryland Farm Bureau was called to order by the President, Mrs. Roy C. F. Weagley, in the Florentine Room of the Lord Baltimore Hotel, January 11, 1939.

The roll was called of the delegates from the counties. Each delegate came to the front and introduced herself and was presented with a Farm Bureau pin as a personal gift from the President, Mrs. Weagley.

The minutes of the last meeting were read and approved. Nominations for directors from the six districts were made by the delegates from the said districts, and there being no nominations from the floor a motion was made that the nominations be closed. This motion was carried. A motion was made, seconded and passed that the nominations be accepted and the ballot was cast by the secretary.

The following directors were elected:

District No. 1—Mrs. Harry Davis, Frederick County
District No. 2—Mrs. Guy Carlisle, Carroll County
District No. 3—Mrs. Hayden, St. Mary's County
District No. 4—Mrs. Atlee Armour, Cecil County
District No. 5—Mrs. Linwood Sutton, Kent County
District No. 6—Mrs. C. C. Phillips, Wicomico County

The six directors then withdrew to make out the ballot of the new officers. While this was being done, Mrs. Weagley called upon Mrs. Harry Williams, vice-president, to talk a few minutes to the women. Mrs. Williams cited the progress made by the women of the Farm Bureau in the past three years. She encouraged all by her usual optimism.

Reports were then given by Delegates of Discussion Group work done in all the counties. These reports were both interesting and encouraging.

The report of the directors' meeting was then made by the chairman, Mrs. Harry L. Davis. The following ballot was presented:

President—Mrs. Joshua Fowble, Baltimore County
Vice-President—Mrs. Claude Phillips, Wicomico County
Secretary—Mrs. Harry L. Davis, Frederick County

Nominations from the floor were called for, but as there were none, a motion was made and seconded that the nominations be closed.

A motion was then made and seconded that the officers nominated by the directors be accepted. This was carried. Each of the newly elected officers gave a short talk.

Mr. Wise, secretary and treasurer of the Farm Bureau, gave a talk to the women on the new organization of the Home and Community Department and its relation to the Maryland Farm Bureau.

Mrs. Weagley then called for nominations from the House of Delegates for six voting delegates to sit in the business session of the Maryland Farm Bureau on Friday morning. The following were nominated and elected:

Mrs. Harry L. Davis—District No. 1
Mrs. Randall Spoerlein—District No. 2
Mrs. P. D. Brown—District No. 3
Mrs. Atlee Armour—District No. 4
Mrs. Richard Blackburn—District No. 5
Miss Winifred Aitkens—District No. 6

Mrs. Weagley asked for suggestions from the delegate body for the County By-Laws for the benefit of the By-Laws Committee in drawing up the new County By-Laws. It was moved, seconded and carried, that the name "County Chairman" be used in the By-Laws. Also that the name of Associate Chairman be given to helpers of the Chairman.

The meeting then adjourned until 12.30.

The afternoon meeting of the Associated Women of the Maryland Farm Bureau was called to order by the president, Mrs. Weagley. The first speaker on the program was Miss Venia M. Kellar, assistant director of Extension. Miss Kellar brought greetings from the Extension Service and State Council of Homemakers.

A verse of America was then sung by the group. Mr. Nuttle, president of the Farm Bureau of Maryland, then gave a short talk. He suggested that the group send Mrs. Weagley as voting delegate to the national convention in Chicago this year, so that she may be retained as national secretary. After his talk it was moved, seconded and passed that Mrs. Weagley be sent as voting delegate to the national convention in Chicago.

Mrs. Weagley then introduced Mrs. Charles Sewell, Administrative Director of the Associated Women of the American Farm Bureau Federation. Mrs. Sewell spoke of the prominent part Maryland has played in the national organization. She chose as her subject "The Distaff." The distaff side of the Farm Bureau is the woman's side. The farm woman has been the last to come out and take part in the distaff celebration. Mrs. Sewell quoted, "All the world rests on the four legs of a cookstove." She said, "take the word 'agriculture' and cut off 'culture' and we have the syllable 'agri'—which means farmer, plodder or soil tiller. So we tie the two together and get farmer plus culture, or agriculture." She spoke of the importance of health in rural America, also of the great subject of World Peace.

Following Mrs. Sewell's talk, a very humorous reading was given by Mrs. David Young.

Mrs. Reginald S. Ankeney, winner of the State Public Speaking Contest, then gave a report on the Regional Speaking Contest.

The reading, "The Leper," by Willis, was given beautifully by one of the women.

The meeting adjourned.

A special meeting of the delegate body was called by the president, Mrs. Roy Weagley, at Thursday noon. Mrs. Harry Davis, chairman of the Board of Directors, presented a special delivery letter from Mrs. Joshua Fowble, the newly elected president, in which she presented formally her resignation from the office. A nomination was made and seconded that Mrs. Roy Weagley be re-elected. This Mrs. Weagley graciously but emphatically declined. A second nomination was made and seconded that Mrs. Edward Fry, of Montgomery County, be the State president to take Mrs. Fowble's place. She was unanimously elected State president.

In the absence of Mrs. Fry, the newly elected president and Mrs. Phillips, the newly elected vice-president, Mrs. Roy Weagley called a special meeting of the board of directors on Friday at 11:30 A. M. to close all business of the year. It was moved and seconded that Mrs. Atlee Armour be elected director from District No. 4 to take the place of Mrs. Joshua Fowble. There was a general discussion of ways to make a better and stronger Farm Bureau. The meeting then adjourned.

ANNA S. SPOERLEIN,

Secretary.

CREDENTIALS FOR HOME AND COMMUNITY CHAIRMAN

County	*Delegate*	*Alternate*
Allegany	Mrs. John H. Loar	Mrs. R. C. Wilson
Anne Arundel	Mrs. Cecil Knighton Mrs. Oscar Grimes	Mrs. Roland Leitch
Baltimore	Mrs. Christopher Wood Mrs. J. A. Fowble Mrs. Joshua Lynch	
Calvert	Mrs. C. R. Belt	Miss Gladys Mogok
Caroline	Mrs. Mildred Kern Mrs. Richard Blackburn	Mrs. Harry Nuttle
Carroll	Mrs. Guy Carlisle Mrs. Danton Ensor	
Cecil	Mrs. Atlee Armour	
Charles	Mrs. P. D. Brown	Mrs. Bergen Brown
Dorchester	Mrs. Charles Schlee	
Frederick	Mrs. Maurice D. Coblentz Mrs. Daniel S. Guyton Mrs. Ira L. Davis Mrs. Roy C. W. Schaffer Mrs. Dorsey Gaither Mrs. Herbert W. Duvall	Mrs. David Young Mrs. Edgar Ferrell Mrs. Tobias Zimmerman Mrs. Vincent Biser Mrs. John L. Smith Mrs. T. S. Anderson
Harford	None	None
Garrett	Mrs. C. C. Beachy	
Howard	Mrs. H. N. Brosenne	Mrs. Roby Mullinix
Kent	Mrs. L. Q. Sutton Mrs. Edward Greenwood	
Montgomery	Mrs. Edwin D. Fry	
Prince Georges	Mrs. Pauline Blandford	
Queen Annes	Mrs. Algernon Carter	
St. Marys	Mrs. Frank D. Hayden Mrs. W. C. Hayman	
Talbot	Mrs. Wm. Hopkins	
Washington	Mrs. Reginald Ankeney Mrs. J. K. Funk	
Wicomico	Mrs. Joseph H. Parker Mrs. C. C. Phillips	
Worcester	Mrs. Preston Jones	Mrs. Handy B. Truitt

MINUTES

OF

First Annual Conference

OF

Maryland Council of 4-H Clubs

January 11, 1939

Delegates and other Older Youth from 15 counties, State and County Extension leaders and others interested in 4-H Club Work attended the first annual meeting of the Maryland Council of 4-H Clubs, January 11, at the Lord Baltimore Hotel.

The morning session was presided over by Rufus King, president of the Maryland Council of 4-H Clubs, and the afternoon session by Miss Dorothy Emerson, Girls' Club Agent. In the absence of Mrs. Elizabeth Cissel Kuhn, Howard County, Mary Johns, Prince Georges County, acted as secretary.

The following counties constituted the charter membership of the Maryland Council of 4-H Clubs: Allegany, Baltimore, Caroline, Carroll, Frederick, Garrett, Harford, Kent, Montgomery, Prince Georges, Queen Annes, and Washington. The officers of the Maryland Council of 4-H Clubs are: President, Rufus King of Montgomery County; Vice-President, Maurice Ahalt of Frederick County; Secretary-Treasurer, Mrs. Elizabeth Cissel Kuhn of Howard County.

The Official Board completed at this session is composed of the aforementioned officers, Mary Jenkins of Prince Georges County, William Shumaker of Allegany County, and Raymond Mueller of Talbot County.

The Council voted a continuation of Soil Conservation and Japanese Beetle Control as State-wide projects and suggested that a writen report of accomplishments be submitted by each county to the general session next year.

A resolution was passed that the State Council sponsor a 4-H Club Sunday in 1939, the time to be set by the Official Board and other details be left to the County Senior Clubs.

It was resolved that the Maryland Council of 4-H Clubs sponsor a special tour to the New York World's Fair. All arrangements with O. K. Quivey of the Baltimore and Ohio Railroad were delegated to Mylo S. Downey of the State office.

State Extension officials expressed the hope that most of the counties of the State would form County Councils within the next year, anticipating that eventually every club member in the State will become a voting member of the Maryland Council of 4-H Clubs.

Inspiring and educational features of the program were:

Life Expectancy; (1) Efficiency in Production, (2) Justice in Distribution, (3) Success in Living.....Dr. T. B. Symons

Goals and Objectives.....Miss V. M. Kellar

Program for Youth Section, American Country Life Association for 1939.....Dr. E. L. Kirkpatrick

The Older Youth Program in Iowa (1938 Payne Fellowship Student) .....Miss Blanche Brobiel

1938 American Country Life Association Convention
Miss Dorothy Fouche

Techniques in Program Planning.....E. G. Jenkins.
Mylo S. Downey

The meeting adjourned with the admonition from Miss Emerson to "Go Forward."

PROCEEDINGS

OF THE

FORTY-FIRST ANNUAL MEETING

Maryland State Horticultural Society

The Armory, Frederick, Maryland

January 4 and 5, 1939

President G. William Gardenhour called the meeting to order at 10:00 A. M. and the meeting was opened by an invocation by Reverend W. Merval Weaver of the First Presbyterian Church, Frederick. The President then called for the Secretary-Treasurer's report.

REPORT OF THE SECRETARY

A. F. VIERHELLER
College Park, Maryland

During the past year, many problems and matters of interest to the apple industry have had the attention of the Secretary, and in most cases, these matters have been referred to the Executive Committee. We have endeavored to cooperate with Applachian Apples, Inc., which, as you all know, is the advertising plan developed by growers of the States of Virginia, West Virginia, Pennsylvania and Maryland. This organization has branched out so that it is more than an advertising plan, but is interested, and has taken a great part in correcting some of the evils and problems of the industry. They have been working on the establishment of one of the Regional By-Product Laboratories established under the New Farm Bill, and this Laboratory will be established near Philadelphia. They are now working, in cooperation with the various Horticultural Societies in having apple by-products, especially apple juice, included in the research program of the Laboratory. Our Society has cooperated in these endeavors.

There has been considerable correspondence regarding the Food and Drug Act. The Eastern Apple Growers' Council, composed of the officers of several of the Eastern Horticultural Societies has been active in having the bill passed in a form that would be fair to fruit growers. We must not forget to give most of the credit for the final form of this bill to the International Apple Association, as they did excellent work in connection with the bill. Our Senators and Representatives in Congress also gave valued assistance in the matter.

The Baltimore Association of Commerce was interested in a State Farm Products Show, and collected considerable data regarding such shows. The State Fair Board has begun a show which has possibilities, and it seemed best to allow the present set-up to continue until the possibilities of such a show can be better observed.

There has been some correspondence regarding inter-state shipment of low-grade apples. This question came from the Eastern Apple Growers' Council, and also from American Pomological Society, and the Iowa Horticultural Society. It is a ticklish problem and must be approached carefully. No movement can be very effective without grower-support.

Your Secretary represented Maryland in a conference on Eastern Apple Boxes. This conference was held in New York and practically every State in the Northeastern section was represented. While the bushel and 1⅕ bushel boxes as adopted may have their disadvantages, the conference at least brought the apple box question down to two sizes, where there were close to 20 sizes in current use.

Our Society joined other Societies in requesting that Government Market Reports, such as that of last August, predicting demand and price, be changed. A conference with representatives of the U. S. Bureau of Agricultural Economics was helpful in clearing up this matter.

There were, of course, many other routine matters attended to and the fine cooperation and assistance of the officers and members of the Executive Committee helped a lot in adding effect and pleasure to the Secretary's job.

The State Fair Board has asked the Society to sponsor the Apple Show in Baltimore. We staged the show last year, and this year's show promises to be larger and better. I ask that the growers get behind this show. It is a good advertisement for Maryland apples.

You will find commercial and educational exhibits in the hall, and also some literature that may be helpful. Mix with the crowd, look over the exhibits, and get all that you can out of this meeting while you are here.

REPORT OF THE TREASURER

A. F. VIERHELLER
College Park, Maryland

As Treasurer, I report a cash balance on hand January 1, of $774.78, Of this amount, $278.20 is in a savings account. Acting as Treasurer for the Maryland Division of Appalachian Apples, Inc., I am running subscription remittances through the Society's books, but also have a separate ledger for complete accounting of these funds. The books of the Society are open at all times for inspection, and I ask that a Committee be appointed to audit the accounts.

PRESIDENT'S ADDRESS

G. WILLIAM GARDENHOUR
Smithsburg, Maryland

Members of the Maryland State Horticultural Society and Fellow Fruit Growers from Neighboring States:

We have come together again to discuss the problems which confront us as fruit-growers today, hearing important topics discussed and exchanging our experiences with our fellow fruit-growers.

First of all, let us see whether our own house is in order, as far as trying to grow the best fruit, and putting up the best pack possible. After all, the old axiom—"The survival of the fittest"—applies to the fruit business as well as to other businesses.

We fruit-growers have arrived at a point where there is work to be done, and we must not expect somebody else to do it, but to do it ourselves, if we can hope to prosper in the fruit business. At this point, I would like to take the liberty to suggest that this Society appoint a committee on Legislation at this meeting.

We have been hearing and seeing much about Government regulation of business, and now we are at the point where our fruit growing business is the next on the program. I refer to the "Wage and Hour Law," as its administrator has applied it to the fruit growing business. A noted writer in the Nation's Business, has recently said, "That business men of the future will have to enter politics and direct its policies or have a hard road to travel."

Let me again suggest that a committee be appointed for this Society, to be present at the hearing in Washington, January 8, 1939.

So, you can readily see, that our problem is not only to grow and pack good fruit, but to not permit laws to be enacted and applied to our business, which will hinder rather than help our business.

ADJUSTING FRUIT VARIETIES AND NUMBERS OF TREES

R. S. MARSH, Head
Department of Horticulture, West Virginia University,
Morgantown, West Virginia.

Will 1939 be like 1937 for apple growers with a large crop of apples and a poor market? At the present time this question can be answered, yes. However, two things may prevent a profitless 1939 season: First, adverse weather conditions can always reduce crop prospects; second, consumer purchasing power and export trade may increase so rapidly that a market can be found for a larger crop, but this is not likely. Moreover, these two factors are elements of chance as far as individual fruit growers are concerned.

Since it is probable that 1939 may be a year of little or no profit for growers, what can the individual do about it? Where can the grower cut expenses without jeopardizing the future of his orchard? Many of us feel that production costs have been too much reduced for quality production and the maintenance of good tree condition. There are some adjustments most of us have thought about and believe to be valuable but so far we have done nothing about it. For instance, thorough pruning and fruit thinning if carried to extreme ends by all growers certainly would remove any possible surplus apple production during the coming harvest season. And we all know that growers spend no money spraying or fertilizing wood from the orchard that is consigned to the brush pile. Neither is there any expense to washing, grading, packing and marketing fruit that has been removed in a thinning process. However, fruit growing is your business and it depends upon having an ample supply of your product for sale, and it is necessary to have high yields per tree, per acre, or per man-hour of labor if low production cost per bushel is realized.

Also, with land values at lower levels together with increasing labor costs, the yield per man-hour of labor is more important than yield per acre. As one of my West Virginia friends said recently, "Years ago we paid 75 cents a day for labor and sold apples for $2 per bushel. Now we pay labor $2 a day and get 75 cents for a bushel of apples." Hence, production efficiency seems necessary for survival in the apple business, along with an improvement in marketing and distribution of the product.

The One-Cut Method of Pruning

The one-cut pruning method is merely a 1939 streamlined phrase for the good old-fashioned statement of tree removal that is recommended for filler trees in a crowded orchard, uprofitable varieties, low yielding individuals and abandoned or dead trees.

In 1936 our Farm Economics staff interviewed 66 orchardists of the West Virginia Eastern Panhandle. These growers represented 40 per cent of the state's bearing apple acreage. These 66 apple growers reported 94,461 trees out of a total of 672,272, which they said should be removed. It was estimated that the removal of this number of trees would reduce production 7.1% although the 94,461 trees was over 15% of the total number of bearing trees, 580,195. When this survey was made, there was some hope that the Agricultural Conservation Program would work out a system of payment based on the number of trees removed. Therefore, orchardists were asked as to what would be a fair payment per tree. Their answers ranged from 50 cents to $27. (Whether it was the Democrats or Republicans that valued their worthless trees at $27 each, depends on your personal viewpoint and to what party you belong.)

Of the 94,641 trees listed for removal 24,410 were low-yielding, 9,811 were dead or abandoned, 24,245 were fillers and 21,610 were undesirable varieties. If these figures represent 40 per cent of the West Virginia

apple orchards then it is estimated that the total number of trees is near 236,000 which should be removed. Also, it is probable that the number is even higher, since growers hope that certain trees will "snap out of it" or that one more crop on the filler trees can be had before they are removed. Now, this situation is not peculiar to West Virginia, but is true particularly in the mid-west and east.

In 1931, I initiated a tree removal campaign in Illinois that is being carried on today. Prior to 1930, the Northwestern states reduced their bearing trees 28%, but increased their production 300% over a 20-year period. Of course, the removal of filler trees in the Northwest was more important than here in the east. This was shown by Dr. A. L. Schrader's report to this Society a year ago when he gave planting distances as being 24 to 28 feet for Western, and 35 to 36 feet for Eastern states. However, based upon the West Virginia survey, about 4% of the bearing apple trees should be removed in this area because of tree crowding and close planting. This is the time to do the job with a one-cut system of pruning or at least give the filler trees a heavy "fanning" treatment to provide room for the permanents and efficient orchard operations.

Low-Yielding Trees

Growers reported on the West Virginia survey that there were as many low-yielding trees to be removed as there were fillers. Again their estimate must have been conservative. Yield data from 78 large orchards in 1936 showed 21 high income orchards had a production of 6.9 bushels per tree and the 17 lowest income orchards averaged 1.7 bushels per tree. Orchards on limestone soils averaged 236 bushels per acre and those on shale soils 99 bushels. Soil and management has much to do with yield and income.

Also, the highest income farms had 90% of their trees in the most productive age group 15 to 30 years, compared to the lowest income groups which averaged nearly 30% in the most advanced age group and only about 60% in the most productive. The 20-to-25-year group gave a production of 172 bushels per acre as compared to 126 bushels for trees that were 35 years or older. These data merely indicate that growers should be alert to apprehend low yielding trees on poor soils or trees that are aged and in a period of decline. Also, diseased, winter-injured mechanically-injured and poorly-located trees as to water- and air-drainage are likely to be boarders or culls. Efficient production necessitates the removal of all trees that are not showing a plus labor income or a small surplus over and above expenses. Dairy herd improvement associations and poultry culling programs have objectives worthy of the orchardists' careful consideration.

Apple Variety Trends

Fifty-four thousand and twenty-five bearing trees were listed by West Virginia for removal because they were of undesirable varieties. Another

conservative figure since individuals differ in opinions as to a variety's merits. As shown in the accompanying table most growers have favored York, Stayman, Grimes, and Red Delicious in the older plantings. More recent plantings have strongly favored Yellow Delicious, Rome and the red sports. Varieties that are shifting to the undesirable class according to the data on non-bearing trees are Ben Davis, Black Twig, Yellow Transparent and Maiden Blush. The most discouraging fact presented by this table is that over 40% of the bearing trees in West Virginia are in the period of decline and only 12.4% are in the non-bearing group that is coming along to take their place. This indicates a general decline in apple production accompanied by a decrease in quality and size of fruit that characterizes old tree performance. All of which means a loss in production efficiency, greater costs per bushel, and lower returns based on a lower grade of fruit. This decrease in apple production cannot greatly improve apple prices because of increasing supplies of competing fruits based on young tree statistics.

Summary and Recommendation

1. Assuming that 1939 can be the same as 1937 for apple producers, now is the time to use the one-cut pruning method. Trees removed from the orchard in the next three months will save on spraying, pruning, thinning, fertilizing, harvesting, and marketing costs. This is the year to wage real war with dynamite, axes and saws on low-yielding trees, filler trees, undesirable varieties, and aged trees producing a low quality product.

2. If you have some money left, invest it for good nursery stock of desirable varieties and plant your best soil and site to a new orchard.

3. These suggestions are made for your welfare and not for your neighbor who occupies the next farm, nor a fruit grower in another state or for growers of competitive products.

Table 1.—*Percentage Distribution of Apple Acreage by Age of Trees According to Principal Varieties as Reported by 239 Farmers in Hampshire, Morgan, Berkeley and Jefferson*

Table 1.—*Percentage Distribution of Apple Acreage by Age of Trees According to Principal Varieties as Reported by 239 Farmers in Hampshire, Morgan, Berkeley, and Jefferson Counties, West Virginia, 1936*

Varieties	Total		Non-Bearing Age of trees			Bearing Age of trees							
	Acres Number	Growers Number	Total Percent	Under 5 Percent	Over 5 Percent	Total Percent	Under 15 Percent	15-20 Percent	20-25 Percent	25-30 Percent	30-35 Percent	35 and over Percent	Unclassified Percent
LATE:													
York	5,424	199	13.5	6.3	7.2	86.5	3.4	5.6	14.7	33.9	16.5	12.3	.1
Stayman	2,378	179	10.0	6.1	3.9	90.0	8.3	25.9	23.0	22.3	7.0	2.0	1.5
Rome	871	84	32.4	24.6	7.8	67.6	9.3	7.3	17.6	26.4	6.3	.6	.1
Winesap	577	80	12.9	6.3	6.6	87.1	5.4	22.3	22.0	28.7	6.9	1.7	.1
Ben Davis	1,212	112	3.1	2.2	.9	96.9	2.6	15.9	13.0	21.9	21.7	16.6	5.2
Black Twig	607	89	.2	.2	.....	99.8	.4	10.4	23.2	47.7	7.3	10.6	.2
All Others	89	16	43.7	24.7	19.0	56.3	20.2	5.4	1.1	24.1	2.2	.....	3.3
Total	11,158	221	12.6	7.1	5.5	87.4	4.9	12.3	17.2	30.0	13.1	8.9	1.0
MID-SEASON:													
Red Delicious	1,587	142	14.7	6.3	8.4	85.3	16.8	31.6	9.8	21.1	1.9	.7	3.4
Golden Delicious	264	30	28.6	17.2	11.4	71.4	37.3	24.5	3.4	6.2	.....	.....	.....
Grimes Golden	1,717	161	6.7	4.4	2.3	93.3	10.8	24.7	16.4	27.3	11.9	1.6	.6
Jonathan	975	99	12.4	7.1	5.3	87.6	5.5	9.9	24.2	35.2	12.0	.6	.2
All Others	622	75	14.7	4.5	10.2	85.3	6.9	30.1	28.0	12.1	6.5	1.5	.2
Total	5,165	204	12.3	6.2	6.1	87.7	12.5	24.7	16.6	24.0	7.6	1.0	1.3
EARLY:													
Y. Transparent	301	46	1.2	.....	1.2	98.8	14.5	48.9	20.4	4.7	9.6	.7	.....
Maiden Blush	152	20	2.0	.....	2.0	98.0	5.9	15.1	26.9	49.6	.5	.....	.....
Wealthy	158	26	9.4	1.9	7.5	90.6	5.2	36.6	22.6	9.0	16.7	.5	.....
All Others	366	48	18.5	8.6	18.5	81.5	4.0	28.4	9.5	30.8	5.0	.8	3.0
Total	977	79	9.1	3.5	5.6	90.9	7.7	34.0	17.7	22.2	7.6	.6	1.1
Misc. and Unclassified	4,065	133	12.6	7.2	5.4	87.4	2.7	3.5	17.2	15.0	3.5	1.5	44.0
Total (all varieties)	21,365	239	12.4	6.7	5.7	87.6	6.4	14.6	17.1	25.3	9.7	5.2	9.3

CHANGES IN ORCHARD PRACTICES IN THE MID-WEST DURING THE PAST DECADE

C. L. BURKHOLDER, Asst. Chief in Horticulture,
Purdue University Agricultural Experiment Station
Lafayette, Indiana.

Mr. President and Maryland Fruit Growers:

I appreciated your Secretary's invitation to have a visit with you this afternoon. Orchard practices undoubtedly have made many changes in the last ten years in every commercial area. Changes in soil management, for instance, have been quite outstanding.

Soil Management. Ten years ago we had a large number of growers who cultivated and cover cropped their apple orchards—now Ohio, Indiana, Illinois and Kentucky maintain a permanent grass or clover sod in almost their entire acreage. We have an 85-acre apple orchard at Bedford, Indiana, about two-thirds of which was nitrated and in grass without supplementary mulch for many years and was compared with an adjacent block of 30 acres receiving clean cultivation and cover crop. On our rolling clay soil the trees in the former cultivated area are now standing on hummocks of soil in spite of the fact that cultivation ceased over ten years ago. For the past ten years the entire orchard has been in grass mulch supplemented with straw. Our straw supply is often hauled in a distance of 15 or 20 miles and the average cost spread under the trees has been about $6.00 per ton. We apply a bale of straw per tree about every other year and while this is not entirely adequate, it is surprising how well the trees respond to the treatment. We are even testing straw on our Indiana peach orchards which are located on sites subject to erosion and, in general, summer cover crops are being maintained in peach orchards as much of the summer as possible, depending, of course, on the crop load and the rainfall.

Stationary Spray Plants. Erosion constitutes a very serious problem, especially in our apple acreage, and mudding through with portable spray rigs and tractors greatly aggravated the situation. In 1929, we used two tractors to pull one sprayer during the pre-bloom sprays at Bedford and then failed to satisfactorily control scab because of inability to cover up as fast as necessary. In 1930, we put in a stationary spray system on 55 acres of this orchard and kept careful cost records in comparison with a 30-acre block handled by a large portable rig. Later the entire orchard was piped and hooked into the original stationary plant. Our figures indicate that in full crop years we make a saving of around $600.00 per year on our spray costs with the stationary which represents the difference between an application cost of about 70c per 100 gallons with a large portable vs. 36c per 100 gallons with the stationary method. I fully realize that on your level sites portable spraying is much easier to carry out, but none of our growers who have

installed stationaries have ever gone back to any type of portable outfit. Even 10- to 15-acre plants can be put in at no more initial cost than the expense of a fully equipped portable rig.

The two major criticisms of the stationary method of spraying have been difficulty in draining and poor coverage in the top third of the tree. We use compressed air to blow out our two Department plants and never have a bit of trouble from freezing injury. The entire blow-out unit on our Lafayette plant cost us $26.50, as we were able to buy a used air compressor and tank. Small plants can be blown out with a large truck tire pump. All lines are flushed out as soon as a spray is completed. At the end of the spray season refuse crank case oil is pumped into the lines—allowed to stand for about 24 hours and blown out and stored for use the next season.

Due to the almost universal soil management system of grass and straw mulch, all but two stationary spray plants in Indiana have all mains and laterals on the surface of the ground except as they go under established roadways. General use of rubber-tired mowers and orchard wagons has also played a part in making surface line installations practical.

Now then, how about the poor coverage in the tops of the trees? My observation has been that this situation is not confined alone to stationary sprayed orchards. Regardless of the type of spray equipment, we have come to feel in Indiana that extra top-off sprays are a very necessary part of the scab and first brood spraying job. We top-off either with a portable rig and tower or use the regular stationary crew and equipment—both get results, but, personally, I prefer to use the regular stationary crew for all topping-off work.

Table 1.—*Arsenic Residue on Leaves From Top and Bottom of 37 New Jersey Apple Orchards*

	Micrograms of Arsenic	
	Bottom	Top
Average in 2 orchards	105.7	119.7
Average of 35 orchards	58.9	31.9
Average of 8 orchards	24.3	9.0

Necessary for control—80 to 130 micrograms arsenic per sq. in.

Need for Top-Off Sprays. I would like to call your attention to a study of spray coverage in the top and bottom of 37 New Jersey orchards by McLean, Weber and Driggers. The leaf samples were taken between June 12 and June 29 after most of the first brood spraying had been completed. Only two out of 35 orchards carried as high a spray load in the top of the trees as on the bottom, while the other 35 orchards had approximately half as much spray material in the tops of the trees as around the bottom. This situation coupled with the fact that a high percentage of codling moth eggs are deposited in

the top third of the trees should make every grower and orchard manager "top conscious." (See Table 1).

For a number of years all fruit for apple scab records at Lafayette was picked separately from the bottom middle and top portions of the tree. Almost invariably there were more scabby apples in the top sample than in the middle and bottom samples combined. Table 2 shows the distribution of apple scab in two different spray plots at Lafayette in 1930.

Table 2.—*Distribution of Apple Scab in Sample—Lafayette—1930*

Tree No.	Fruits in Sample	Part of Tree Sampled	% Total Scab
	2115	Bottom	6.8
Rome Tree 23	785	Middle	17.0
	633	Top	43.9
	730	Bottom	1.6
Rome Tree 25	314	Middle	12.7
	344	Top	25.6

Now, what changes have been made in spraying practice to remedy this situation? For several years a good many of our Indiana growers have been applying extra top-off sprays on scab susceptible varieties or substituting a "top-off" for a complete spray when the weather was not especially favorable for scab development. The 1939 Indiana and Illinois spray schedules will list a calyx top-off as a regular spray for the first time and recommend using the same materials as in the regular calyx application. In this case both codling moth and apple scab control will be re-enforced and in our own Department acreage no special fungicide will be included in any of the cover sprays as far as scab control is concerned, (which is a practice we have followed since 1934.)

Table 3.—*Surface Area Increase of Grimes Apples at Lafayette in 1937*

Date	Surface Area
Calyx	
May 19	.16 sq. in.
May 24	.35 " "
May 26	.63 " "
June 1	1.30 " "
June 7	2.24 " "
June 14	3.20 " "
July 19	8.20 " "
August 23	12.50 " "

Fruit Growth Thins Out the Spray Cover. Still another very definite trend in spray practice during the past decade has been the shortening of intervals between first brood cover sprays. Let's give a few minutes to a review of the apple growth situation during the four week period after petal fall. (See Table 3.) At petal fall it takes about 6,000 apples

to make one pound. A week later about 700 apples weigh one pound and from that time on for several weeks the surface area of each apple doubles every five or six days. Naturally this very rapid growth drastically thins out the spray film as shown in Table 4.

Table 4.—*Micrograms of Arsenic Per Square Inch of Apple Surface Before and After Sprays—Lafayette—1937*

Apples per 1 lb.	Spray Date	Time Sampled	Micrograms Ars. per sq. in.*
680	5/26/37	After 1st cover	86
238	6/ 1/37	Before 2nd cover	34
238	6/ 1/37	After second cover	118
105	6/ 7/37	Before 3rd cover	39
105	6/ 7/37	After 3rd cover	98
62	6/14/37	7 days after 3rd cover	68
4	9/27/37	At harvest	15

According to studies by entomology workers in several states, from 80 to 130 micrograms of arsenic per square inch of apple surface seem necessary to give dependable protection against codling moth entrances. A study of the drop in arsenic load between sprays which are spaced even as close as six or seven days apart is another matter which should claim the attention of all orchard operators. Only a few years ago most growers allowed as much as 10 to 14 days to elapse between first brood cover sprays, but in our three-brood codling moth areas in Indiana and Illinois it has become a necessity to shorten the interval between the sprays applied just preceding and during the early part of first brood egg hatch.

In Table 5, first two lines, is shown the 1938 arsenic load before and after the fourth cover spray in our stationary sprayed orchard at Bedford. The fourth cover stepped up the arsenic film from 62 to 166 micrograms which would allow for considerable further growth and stretch out before the spray film would thin out enough to allow any entrances.

Table 5.—*Micrograms Arsenic per Square Inch Surface—Bedford 1938 (Winesap)*

Plot	Spray Treatment	Sprayed and Sampled	Micrograms Ars. per sq. inch	Apples in 1 lb.
3	Before 4th cover	6/ 2/38	62	50.0
3	4 covs. lead-oil+2 top-offs	6/ 2/38	166	50.0
1	6 " B.L.155+1 cov. lead-oil	7/26/38	122	5.5
1	6 " " " +2 covs. " "	8/11/38	170	4.0
2	7 " " " +1 cov. " "	8/11/38	164	4.0

* Necessary for protection—80 to 130 micrograms.

Washing Results on Harvest Samples—Bedford—1938

Plot	Before Wash Gr. Ars.	Thru 2¼% acid for 20 sec. @ 63°
3	.054	.014
2	.045	.010
1	.078	.011

The Use of Oil-Lead After Oil-Nicotine-Bentonite. Before we leave the subject of spraying I would like to mention another change in spray practice and that is the use of tank mix nicotine-bentonite and commercially prepared mixtures of similar content to replace arsenate of lead in codling moth cover sprays. We have a number of large commercial growers who used this type of material exclusively after the calyx spray in 1938. However, I do not wish to discuss the merits of lead-oil vs. oil-nicotine materials, but I thought you might be interested in one of our 15-acre blocks of Winesap and Grimes which received one of the well-known commercial oil-nicotine-bentonite materials in six cover sprays and at the time for the seventh cover on July 26 a part of this block received six pounds of lead arsenate and one quart of summer oil in ¾-1½-100 Bordeaux. On August 11, or at the time of the eighth nicotine spray, this lead sprayed area received a second cover of four pounds of lead arsenate and one quart of summer oil in ¾-1½-100 Bordeaux. This treatment is shown as plot 1 in Table 5. At the same time (August 11) the nicotine sprayed area was further divided and a part of the trees given just a single application of six pounds of lead arsenate plus one quart of summer oil in ¾-1½-100 Bordeaux and this treatment is shown in Table 5 as plot 2. It is interesting to note the very heavy arsenic deposit built up by a single lead-arsenate spray at this season of the year. No foliage injury occurred as a result of either one or two lead-oil sprays.

Plot 1 represents the standard spray treatment of a calyx, 4 covers and 2 top-offs with lead-oil in three of the covers applied at approximately 7-day intervals after calyx on 70 acres adjoining. When samples from plots 1, 2 and 3 were washed in an underbrush-flood washer, using a 20-second exposure at 63°, the arsenic load on plots 1 and 2 was cleaned practically to tolerance, but the samples from plot 3, which was sprayed last on June 2, required an acid temperature of 100° to reduce the arsenic load to a safe point. From the standpoint of control in this particular orchard, the results seemed to indicate that one heavy lead-oil spray applied about August 1 to 5 would have been entirely sufficient to have checked the heavy third brood attack which took place from August 5 to August 25. I am definitely not recommending such a spray practice, but I do know that next season we will have several hundred acres of mature orchard in Indiana that will receive a nicotine schedule for first and second brood followed by one or possibly two lead-oil sprays in early August. Spray injury is a very serious problem in our

southern Indiana orchards and sad experience seems to indicate that a calyx and four covers and two top-offs of lead arsenate are all our trees will stand, and we are greatly interested in any type of spray program that is effective in three brood codling moth areas and at the same time will not injure the foliage to such an extent as to reduce size of fruit and future crop prospects.

Pruning. No discussion of this sort would be quite complete without some mention of the old "saw"—pruning. Up to about 1930 our Indiana growers did a minimum of pruning, as even cull grades of fruit brought profitable prices and a large volume production was the goal. Since that time much heavier pruning of mature trees has been practiced and for three main reasons—*first,* to better the quality and reduce percentage of cull grades; *second,* to make it possible to do a more efficient job of spraying. Special attention has been given to holding down height and removing as much wood in the center top of the trees as could be spared without sun scald. (I'd like to hew out the entire center top of every mature apple tree we have in our station orchards—if that were possible, spray costs could be drastically reduced and pest control greatly enhanced.) *Third,* we feel that heavier pruning is cheaper than spending so much time on thinning and this is particularly true of varieties such as Transparent.

Two Dog-Eared Alibis. Now, let's consider several grower explanations of failure to obtain adequate pest control. Number one is a scabby crop of fruit and the excuse, "We couldn't spray in the rain!" Spraying in the rain is not very enjoyable, but neither is waiting for twelve years for a crop and then have apple scab do the harvesting. Our spray crews worked two entire days in the rain in 1937 in order to keep our acreage protected. It can be done and smart growers are doing it, when necessary, with good results. Our Lafayette acreage received three in-bloom sprays in 1933. From the last pre-bloom spray on April 28 to petal fall on May 16 there were eight days of rain totaling 5.43 inches. In 1929, during a corresponding period, it rained 16 days for a total of 6.63 inches. I am proud of the way most of our Central West growers are using the weather as their guide for scab sprays in preference to a spray schedule which is never rain conscious. This has been one of the most money-making changes I have noted in the Central West during the last ten years.

Alibi number two—"We can't screen our packing shed!" The only perfectly controlled codling moth are the ones that are killed before they ever reach the apple tree. I have seen a lot of packing sheds in the last 25 years and never a one that could not be made moth-tight. Take for example the Troth-Burton packing shed at Orleans, Indiana. It is a three story building, 72x72, built of rough lumber. The Canton cloth used over the entire outside surface originally cost $45.00 and the same cloth was used three seasons. The cost of putting up and removing the cloth was $8.00 per year, making a total cost of $23.00 per season. In 1934, 236,300 moths were actually collected and counted by the use of

electric traps, and an estimated additional 30,000 were found in the folds of the cloth when it was removed from the outside of the building. The maximum single day catch was 15,579. Yes, we have codling moth troubles in Indiana and who ever heard of screening packing sheds ten years ago? Our Central West growers who are located in the three brood areas have been forced to start the first brood control fight by thoroughly screening all packing sheds which should also house all the previous season's packing and handling equipment.

Pest control, spray residue regulation, poorer annual production, lowered organic content of our soils, fertilizer costs, demand for higher quality fruit put up in more attractive packages, etc., have resulted in steadily mounting production costs, while net income has often approached the vanishing point. I can almost hear some of you muttering, "and in spite of such a situation he has taken up a half hour of our time emphasizing changes in orchard management practices that cost more money." Now give me a "break"! Is that an actual fact?

1. Grass supplemented by straw is cheaper soil management than cultivation and cover crop. (At least in Indiana.)

2. Our figures show spray costs can be reduced by using stationary spraying equipment with at least no reduction in pest control efficiency.

3. Isn't it good economy to add $100 to the spray bill for extra top-off sprays if that's the weak link that breaks down the whole effectiveness of the pest control investment? And what about the saving when a top-off is used in place of a complete cover?

4. How can reducing the interval between first brood covers actually reduce spray costs? Let me give you an example. For many years we applied four cover sprays on our apple acreage at Lafayette—two sprays against first brood and two against second brood. Since 1934 we have reduced the number of sprays to three and apply them all against first brood. At Bedford we formerly applied five or six cover sprays against first, second and third brood—now we apply four covers and two top-offs—*all against first brood.* In both areas our spray costs have been actually reduced.

5. I mentioned the fact that we are trying to work out a spray program that will give satisfactory pest control, avoid spray burn and encourage better annual production. Such a program would pay dividends even if somewhat more costly.

6. If the pest nests in your orchard are mainly located in the center tops of the trees, it will reduce eradication costs to prune out as much as possible of that area of the tree.

7. It's just plain bone-headed to use the packing shed as a codling moth incubator and then turn around and spend good money for extra sprays to lock the barn after the horse is stolen. How can any grower save money during a prolonged rainy period by sitting around the stove and cussing the weather?

We Central West folks certainly have plenty to learn about new and better orchard management practices. Many of us could do a lot better if we put into practice more of what we already know and spent less

time looking for new Utopian spray materials that promise to kill off all the orchard pests with a reduced dosage, fewer sprays and less work.

I want to thank you again for this invitation to meet with you and it is my earnest hope that I may have said something this afternoon that will direct your atttention to a few weak links in your orchard management program and that you can reforge these weak links at a minimum of expense and an increased profit to your organization.

THE USE OF BAITS IN ORIENTAL FRUIT MOTH CONTROL

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It has long been known that insects are attracted to numerous baits, but the use of baits to attract and capture the oriental fruit moth, *Grapholitha molesta* Busck., is rather recent. During the past few years bait trapping as an aid in fruit moth control has been practiced by many Virginia orchardists. In the commercial use of bait traps some of the most frequent questions asked by peach growers are: What kind of trap shall I use? Where shall I hang it in the tree? What bait shall I use? How can it be prepared? How many traps shall I use per acre? What proportion of the moths captured are females? What results can I expect from the use of bait traps? Some of these questions can be more or less definitely answered, while the answer to others is still unknown. The data presented in this paper were obtained by the use of bait traps in peach orchards in Albemarle County, Virginia, during the seasons of 1935 to 1938, inclusive.

Results of Experiments

Type of Trap. Many different types of bait traps have been suggested and used by investigators during the past few years, some of which are: Metal cans ranging from one quart to one gallon in capacity, pint and quart fruit jars, cones, buckets, crocks, and tin and enamel stewpans. Most of these types of containers have been tested as bait traps in Virginia. Quart tin cans have proved most satisfactory and shallow stewpans the least satisfactory for commercial baiting.

Color of Trap. It has been observed that the reaction of the bait solution upon tin traps reduces the efficiency of the bait, and that tin traps, to be used a second season, must be painted. During 1937 and 1938 experiments were made to test the following colors of paints for their attractiveness to the oriental fruit moth and for their value in protecting the tin against the action of the bait: Red, yellow, black, white, and aluminum.

From the results obtained it cannot be said that moths are attracted to any of the colors used, although traps painted with light colored enamels caught slightly more moths. Two coats of paint increased the life of a tin-can trap to 3 or 4 years. Traps painted with aluminum

paint lasted longer than other painted traps, and it was the most satisfactory paint tested.

Covers Over Traps. During certain seasons of the year so many large moths and beetles were captured in bait traps that they often filled the traps and caused the solution to become putrid. In order to study the effect of wire-screen covers on the catch of oriental fruit moths, experiments were made in 1936 and 1938 with traps which were covered and not covered with ¼-inch-mesh-wire screens.

In 1936 there was a light infestation of moths, but during 1938 considerable numbers were captured. The data obtained the first year indicated that the catch of moths was materially reduced by the use of screens, but in 1938 there was only a slight difference in the number of moths caught, 703 moths in traps with covers and 710 moths in traps without covers.

Position of Trap in Tree. In 1936 an experiment to determine the effect of the height of trap in the tree on the number of moths caught was started on June 23 and continued until August 18. Three peach trees about 10 feet tall were selected in the center of a large orchard. Three traps were used per tree, one being placed on the ground, one 4 feet from the ground, and one 8 feet from the ground. All traps were filled with a solution of lignin pitch and terpinyl acetate.

The results of the experiment indicate that the position in the tree is an important factor in determining the efficiency of the trap. The traps in the tops of the trees captured 75.9 percent of the total number of moths caught, and the traps placed on the ground failed to catch any moths. In commercial baiting, however, it is more practical and more economical to suspend the traps from a stout limb in the center of the trees than it is to suspend them from small limbs in the tops of the trees. Traps hung from small limbs will have to be refilled more often, thus increasing the cost of operation.

Materials to Use as Bait. Experiments were conducted on the attractiveness of bait solutions to the adults of the oriental fruit moth during the seasons of 1935 to 1938, inclusive. During this four-year period 80-odd combinations of materials were tested. There were five traps of each material tested and these were distributed over the experimental block of trees. Each trap was suspended from the highest stout limb in the tree and the traps were placed in alternate trees of alternate rows.

Quart oil cans from service stations were used as traps and were prepared as follows: The tops were removed from the cans by means of a can opener. Pieces of 15-gage wire, 18 or 20 inches long, were inserted and fastened in holes punched in opposite sides of the cans and were used as bails for suspending the traps. The wire bails were wrapped around the limbs on which the traps were hung in order to prevent their being blown down. The traps were painted with aluminum paint in 1938 but were not painted during the other years the tests were made.

In baiting a block of trees, the carrier was mixed in a 50-gallon barrel and hauled on a small truck to a central location in the block. A

5-gallon can was used in filling the traps after they had been distributed in the block. Each trap was filled three-fourths full of the solution, and the attrahents were added at the rate of 1 cc. per trap, unless otherwise noted. The containers were then suspended in the desired location in the trees. All the attrahents were emulsified with a 5 percent bentonite and water mixture before being added to the traps.

The results of eight of the most attractive materials and for lignin pitch alone (Glutrin) and stock syrup alone (Barrel molasses) are given in Table 1. During each year terpinyl acetate in a lignin pitch and water solution gave the highest catch of moths. There was no significant difference in the catch when ½ cc. and 1 cc. per trap was used but 1 cc. is considered the most desirable amount to use. The amount of bait material used at one time was effective for about 4 weeks. Rainfall generally compensated for evaporation. The addition of water to the traps, therefore, reduced the concentration of the terpinyl acetate solution to such an extent that when ½ cc. per trap was used the bait often became ineffective before the period had elapsed. The brown sugar was somewhat objectionable in that many large moths and beetles were captured in the bait solution and caused it to become putrid before its normal period of attractiveness had been exhausted.

Preparation of lignin pitch-terpinyl acetate bait. The most attractive bait to the oriental fruit moth was lignin pitch (Glutrin) 1 part to 20 parts of water plus 1 cc. of terpinyl acetate per quart of solution. For commercial baiting this bait was prepared as follows: 3 ounces of bentonite was soaked in ½ gallon of water for 24 hours, and 14 fluid ounces of terpinyl acetate was slowly added with constant stirring or shaking until all of the terpinyl acetate had been emulsified. Five gallons

Table 1.—*Number of Oriental Fruit Moths Caught by Different Baits in Traps at Greenwood and Crozet, Virginia. There were five traps of each material.*

Materials	Number of moths caught during: 1935	1936	1937	1938
Lignin pitch:				
Terpinyl acetate (½ cc.)	.....	590	1093	621
Terpinyl acetate	121	570	1078	597
Brown sugar (1 Oz.)	62	327	322	372
Ethyl formate	.....	*	342	325
Fennell seed oil	.....	188	146	217
Acetic acid (50%)	.....	.....	181	206
Linalool	*	120	209	116
Lignin pitch alone	8	64	87	52
Stock syrup:				
Terpinyl acetate	85	294	404	.....
Stock syrup alone	13	25	117	94

*Used for a short period during season.

of lignin pitch was mixed with 100 gallons of water, and the emulsified terpinyl acetate added. The bait was then ready to be used in the traps.

Number of Traps per Acre. Various numbers of bait traps have been used, ranging from 1 to 50 per acre. One trap to an acre of peach trees captured almost one-third as many moths as 20 per acre in 1938. Observations in Virginia indicated that 8 traps per acre of peach trees was sufficient for practical purposes. Traps in excess of that number increased the cost of baiting without further materially reducing the moth population in the orchard.

Proportion of Sexes Caught. Observations have been made over a period of several years on the percentage of male and female oriental fruit moths caught in bait traps. All of these observations showed that the two sexes were attracted to the baits in approximately equal numbers. At seven examinations of traps during 1938 the moths captured in each of the baits were kept separate and the number of male and female moths determined. The results of these examinations are given in Table 2. These data show that fennel seed oil captured the highest percentage of females but that moths were attracted to the majority of the baits in approximately equal numbers. The average percentage of female moths captured for all materials was 53.7 percent.

Value in Control. The common method of determining the value of a control measure for an insect is not a satisfactory method for determining the efficiency of bait traps for the control of the oriental fruit moth. Data obtained by comparing the damage done in baited and in unbaited areas did not accurately show the value of traps in control because the moths moved from tree to tree. In fact, the moths usually migrated from the unbaited to the baited blocks and the baited blocks thus contained many times more moths than the unbaited blocks. Studies on moth flight have been made by the release and capture of dyed moths, and the data obtained from these studies showed that oriental fruit moths often migrated from ¼ to ½ mile and that a considerable number of the moths traveled 400 to 500 feet from the place of liberation.

In 1936 bait traps were used commercially in a 32-acre peach orchard. The writer kept records on 27 traps selected so as to give a cross section of the moth catch in the orchard. From June 1 to July 16, an average of 10.8 moths per trap were captured. It is estimated that in the entire orchard 10,800 moths were captured during the 6-week period. During the past two years hundreds of acres of peach orchards have been baited by orchardists, and the results obtained have been regarded as favorable. In several of the baited areas, the fruit infestation was as much as 42 percent less than in check areas. Investigators in other states have stated that an apparent reduction in wormy fruit of not less than 60 percent was obtained as a result of trapping. Although the exact percentage of reduction of infested fruit in an experiment with bait traps cannot be determined, the fruit infestation at harvest has been sufficiently low for the growers to make a profit

Table 2.—*The number and percentage of female oriental fruit moths captured in traps. Collections of moths were made on May 4 and 7; June 6, 8, 11 and 14; and July 1, 1938.*

Materials	May		June		July		Total	
	No. moths	% females	No. moths	% females	No. moths	% females	No. moths	% females
Lignin pitch:								
Terpinyl acetate (½ cc.)	14	85.7	210	46.2	7	42.9	231	48.5
Terpinyl acetate	2	100.0	142	54.2	7	28.6	151	53.6
Brown sugar (1 oz.)	0	0.0	112	46.4	0	0.0	112	46.4
Ethyl formate	7	85.7	90	51.1	8	37.5	105	52.3
Fennel seed oil	2	100.0	49	73.5	2	100.0	53	75.5
Acetic acid (50%)	1	100.0	56	62.5	5	20.0	62	59.7
Linalool	2	100.0	51	64.7	0	0.0	53	66.0
Lignin pitch alone	1	0.0	16	50.0	0	0.0	17	47.1
Stock syrup alone	0	0.0	17	58.8	0	0.0	17	58.8
Total and average	29	86.2	743	53.0	29	37.9	801	53.7

on the peach crop, and many of those who have used bait traps feel that baiting is profitable. It is reasonable to assume that the elimination of thousands of female moths containing a large percentage of their eggs should give some reduction in the degree of infestation in an orchard.

Summary

Quart tin cans were more satisfactory for commercial baiting than other types of traps.

Aluminum paint was the most satisfactory for protecting bait traps and for attracting oriental fruit moths.

Quarter-inch mesh-wire screens decreased the catch of moths approximately 65 per cent in 1936, but did not materially reduce the catch of moths in 1938.

When bait traps were suspended at several different heights in peach trees, the traps in the tops of the trees captured 75.9 percent of all moths caught.

The moths were captured in largest numbers in traps using a bait solution consisting of 1 part of lignin pitch to 20 parts of water to which 1 cc. of terpinyl acetate per quart was added.

Eight traps per acre was sufficient for commercial baiting.

Male and female moths were attracted to the majority of the baits in approximately equal numbers, and the average percentage of female moths captured for all baits was 53.7 percent.

In several of the baited areas, the fruit infestation was as much as 42 percent less than in check areas.

PHYSIOLOGICAL DROP IN APPLES

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The problem of physiological drop in tree fruits is as old as is the art of growing fruit. Promising crops, sometimes, literally fall to the ground for no apparent reason. The problem naturally is not simple, otherwise, it would have been solved years ago. It may be deeply involved with several factors, which can materially lessen the harvest; and control measures for some of them at the present time are not practical.

In discussing fruit drop, it is proposed to briefly call attention to some of the more prominent factors which can act as a check on fruit development. Insect and disease injury in relation to drop will not be discussed here.

Fruit-Bud Initiation and Development Depend on Good Culture

That normal crops of fruit are dependent on abundant fruit-bud initiation and healthy development of such fruit and flower buds is

well known. Also, it is common knowledge, that such fruit-bud initiation occurs during the summer and fall months preceding the fruit crop. Any orchard practice, therefore, that assists in normal development of trees will also aid in the development of good fruit and flower buds. Trees possessing normally vigorous spurs and fruit buds, will be in good condition to begin the new apple crop.

All trees that for any reason, such as, improper feeding, pruning, and spraying, are weak in fruit-bud development will begin the new season under a handicap, the seriousness of which will depend on their remaining vigor and future care. Undeveloped flower buds cannot set fruits. Even fairly well developed flower buds, that must be supported by a weakened tree, cannot long maintain normal growth and development which is absolutely necessary in the continued struggle for existence. Weak flower structures and those supported by weak spurs or by weak trees, are destined to fall early, probably sometime during or immediately after the blossoming season. Healthy and vigorous trees are needed to produce regularly good crops of fruit.

Winter-Killed and Retarded Buds

Trees sometimes enter the dormant season in excellent condition, yet they may encounter unseasonable weather during the winter months. This unseasonable weather may take the form of one or more prolonged periods of warm, sunny days which have a tendency to activate fruit buds before their normal season. A sharp drop in temperature after such warm spells may severely injure, not necessarily kill, the young, tender tissues within the buds.

Fruit buds of the apple are seldom winter-killed in Delaware. Stone fruits, on the other hand, may suffer variously, depending on variety and exposure. When such fruit buds are winter-killed, they fall in a wave that precedes all other forms of drops. By careful jarring of the trees, these fruit buds will come down just preceding or during the blooming period. Improperly developed flower buds and those that were seriously injured by low temperatures during early spring, will fall soon after the full bloom stage. They are among the first of the dropping flowers. Frosted Transparent flower buds, at the cluster bud stage fell, in 1928, during the blooming period.

Low temperatures in early spring may occur at any time and this makes it possible for young buds, if not killed, to be at least seriously checked in growth. During the 1928 season, Transparent trees produced many flowers that showed gradations in suppression of the pistils. Flowers bearing such defective pistils cannot set fruit. Also, among such flowers there were many that showed defective or abortive stamens from prolonged cool weather in early spring. Flowers, such as these, which had been checked early in development, will fall together with other imperfect flowers soon after the petal fall stage; i. e., among the earliest of the first large wave in May.

Improper Pollination of Flowers

Improper pollination, as all know, is a serious factor in the setting of fruit. Without pollination apples, as a rule, will not set. Fertilization of the ovules, however, not simple pollination of flowers, is necessary to initiate fruit development. Some varieties, like a few of the Winesap group, are incapable of producing perfectly formed flowers. Most of the pollen grains and possibly some of the ovules are abortive. Their development is irregular from genetic causes. Flowers with defective ovules and normal flowers pollinated with defective pollen will fall within ten to sixteen days after bloom. Normal flowers, pollinated with incompatible pollen from its own or from other flowers, will share a similar fate. Such flowers may, however, receive a pollen stimulus which can induce slight enlargement of the torus. This phenomenon is common in other plants and therefore presumably also present in the apple. Because of the pollen stimulus, such flowers may remain attached a few days longer than those that were not pollinated. These, then, will fall a little later than non-pollinated flowers but will overlap with them.

After the flowers have become fully formed, there are more perils that tend to prevent fertilization and fruit development. Prolonged cool, cloudy spells, prolonged rainy weather, and high winds considerably affect the extent of pollination of flowers because they prevent the flight of bees which, as is well known, are the best pollinators in the apple orchard. In the absence of pollinators, self-unfruitful flowers may not become pollinated and these like those previously mentioned will fall early in the May wave.

Embryo Abortion

Mingling and considerably overlapping with dropped flowers of the non-pollinated group are a large number of pollinated and fertilized flowers, which now may be called young fruits. Careful study has shown that these fruits contain fertilized ovules and that the fall of such fruits results from the death of the tiny embryos. Embryo abortion, therefore, leads to abscission and fall of the fruit. These fruits fall about two to three weeks after full bloom and, by overlapping with those of the non-pollinated class, form the downward slope of the large wave in May. They are the first real fruits to be eliminated in the race for survival. Towards the close of May, in Delaware, and depending somewhat on season the large composite wave subsides and within a few days another wave containing larger fruits commences. This is the first of the June-drop waves.

The size of the individual fruits, that fall in early June, varies with variety and with date of fall. In all instances, they begin relatively small but they regularly increase in size with each succeeding day. This indicates that the factor for embryo abortion is active more or less continuously over a period of time and that periodically it increases and

decreases in intensity. This pulse-like action causes the wave-like distribution of dropping fruits which is apparent to everyone.

Following the first June drop wave there may be another and sometimes even a third one. These waves always run in ever-decreasing numbers but the individual fruits are of ever-increasing sizes. By the end of the second or third week in June, the last of the June drops will have fallen and all fruits then remaining on the trees are ready to commence their regular summer's growth and development. In early apples, this summer period is short, while in late apples it may endure from two to two-and-a-half months.

We do not know exactly what causes embryo abortion. We do know, however, that its effect is noticeable year after year with clock-like regularity. It is so persistent that environmental factors at times may hide it but they cannot change the time of its expression. The intensity of such expression may be varied by some factors, notably nutrition and any factor influencing nutrition, but the factor for time remains steadfast for each genetic individual. We also know that the seasonal progression of embryo abortion is pulse-like, i. e., it periodically increases and decreases in intensity, thus producing the characteristic wave-like dropping of young fruits. It occurs in all of our orchard fruits and many, if not all, other tree fruits. The waves of drops, for any particular tree or variety, occur at about the same time year after year but for different varieties and different kinds of fruits, they may vary widely and never be the same. Such a fixed expression, one that is not easily modified by environmental factors, indicates a factor linked with the genetic constitution of the individual.

The expression, i. e., the wave-like progression, of embryo abortion would, on the face of it, seem to be discontinuous. The gaps between waves would indicate rest periods. However, the weight curve for the average of daily drops, by its continuous rise, indicates that the stimulus is continuously active. There are no wave-like fluctuations in the average weight curve for the daily drops.

Comparative Significance of the Several Waves of Drops When Numbers Alone are Considered

When successive waves of dropped fruits are to be compared, there are two factors that must always be considered. These are, actual daily numbers and total daily weight or mass.

When numbers alone are to be considered, then the large complex wave of May looms significant. As already stated, this wave may be composed in part of the following classes: (1) frozen fruit buds, (2) winter injured or retarded flowers, (3) undeveloped flower buds and flowers, (4) frosted flowers, (5) non-pollinated flowers, (6) pollen stimulated but non-fertilized flowers, and lastly (7) of fertilized flowers which actually have begun to grow in size.

The numerical proportion in the wave of such classes will depend considerably on the opportunity or time that the responsible factor has

had time to act. Under favorable conditions, good orchard management during the preceding season will insure a sufficient number of strong fruit and flower buds. Fluctuating temperatures during the winter months can neither be foretold nor controlled. Late spring frosts may in a measure be controlled through the use of orchard fires. Unsuitable weather at time of pollination cannot be controlled. Pollination of the orchard and fertilization of the flowers can in part be controlled by providing bees to act as pollinators and by knowing which varieties are compatible.

Under normal conditions and with proper pollination facilities, the majority of drops during May will have been fertilized and the factor chiefly responsible for such loss will be that causing embryo abortion. Death of the embryo always precedes abscission and fall. Tukey*, of the Geneva Experiment Station, New York, has shown that the integument of the seeds, which is mother tissue, fails even earlier than does the embryo itself. Therefore, the force that kills the integument also kills the embryo. The nature, however, of this force is not yet disclosed.

Apparently the same factor that struck in late May strikes again in early June to produce the first wave of June drops. The first June-drop wave, considering numbers of fruits only, is small compared to the May-drop wave and the succeeding waves are still smaller. This sequence in numbers of dropped fruits is quite to be expected because of the ever-decreasing number of fruits that are left on the tree after each drop.

With some fruit varieties and again under some orchard management, there may be no June-drop waves because of the excessive numbers that came down in May, but with fertile varieties and good management there will be from one to three June-drop waves. When the May drop is heavy, the June drop will be comparatively light and, conversely, when the May drop is light then the June drop can be expected to be heavy. Apparently, a kind of balance between the tree and its crop must be established by the end of June. Naturally all flowers, defective from whatever cause, all non-pollinated, and all non-fertilized flowers will fall during May. If this portion of the flower crop is large then the early drop will be large. Why the fertilized flowers and young fruits fall variably in the May and the June drop is not clearly known. It is known that the carbohydrate-nitrogen ratio of the tree and spurs exerts a strong influence on this phase of the problem.

If the crop of young fruits surviving the May drop is large, then it must of necessity lose a large percentage of its numbers during June before the natural balance between tree and fruits can be established. The weak spurs will drop most of their fruits and the multiple-fruited strong spurs naturally will drop the weakest of their numbers. The surplus of young, otherwise healthy, fruits must be dropped before the end of June in order to establish that balance which reasonably can be

* Tukey, H. B. 1936. Development of cherry and peach fruits as affected by destruction of the embryo. Bot. Gaz. 98:1.

matured. These are the fruits that naturally swell the numbers in the June drops.

Comparative Significance of the Several Waves of Drops When Mass Alone is Considered

When drops are considered in mass or weight, then the comparative size of each wave coincides more nearly with what really is seen on the ground under the trees. The complex wave of May in the on-year is still of considerable significance and must be carefully analyzed as to cause because of the tremendous numbers involved, but, because of the comparatively small size of the individual fruits and their scattering on the ground, this wave seldom attracts attention.

When weight is considered, the complexity of the May wave becomes more apparent in that the individual factors, causing the fall of the flowers and fruits, have a better chance of expressing themselves and the large complex, though apparently single wave, becomes in reality a series of overlapping waves, each one of which may have been brought about by a distinct factor.

The first June-drop wave looms much larger in comparison to the May drop when total weight is considered. All succeeding waves are much more pronounced than when numbers alone are considered. The mass of the succeeding waves, however, always falls below that of the first June-drop wave.

By total mass, the June drops emphasize the material growth that must be sacrificed to the factor for embryo abortion.

Comparative Importance of the Physiological Drop

The importance of the May and June drops, sometimes, may be exaggerated. If the trees are healthy and vigorous, due to careful culture, i. e., feeding, cultivation, pruning, spraying, etc., then the physiological drop grows less in importance. The stronger and more vigorous a tree becomes the greater will be the number of flowers and naturally also the actual number of physiological drops. If the percentage of set fruits remains the same or is increased with better culture of trees, then the number of such set fruits will increase regardless of the increase in number of physiological drops.

Pre-Ripe Drops

There is still another drop that should here be mentioned, one which for want of a better term I here call the pre-ripe drop. It may occur variously in different fruits. This year it was widespread in the eastern states and occurred after the copious rains of fall set in. This drop bears no relation to the physiological drop of the early months and it is not brought about by insect or disease activity. Observations seem to point to a combination of weather conditions, such as a prolonged rainy

spell following a severely dry period. Heinicke* after much experimentation concludes, "Observations recorded suggest that the formation of the absciss layer is associated with the inhibition of sap movement . . . when the movement of sap ceases while the spur is still active, as it does . . . when transpiration is checked by coating the fruit with vaseline or by exposing the fruit and spur to humid conditions, the abscis layer is produced which brings about the shedding of the fruit or the stem." When continued rainy weather in the fall months produces prolonged periods of great humidity, transpiration in both fruits and leaves ceases or at least is much retarded. This induces the development of the abscission layer at the spur and the fruits are liable to drop before their natural time. Normally the abscission layer is not formed until the fruit reaches maturity.

COOPERATIVE JAPANESE BEETLE CONTROL WORK IN MARYLAND FOR 1938

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The Japanese beetle work in Maryland is divided into two phases, retardation work and regulatory work.

Retardation work is designed to delay and control the Japanese beetle in infested areas.

Regulatory work is designed to prevent undue and rapid spread of the beetle to uninfested areas and to guarantee markets and the free movement of farm produce and nursery stock from quarantined areas to non-quarantined areas.

Retardation Work

During the past year a state-wide cooperative Japanese beetle retardation program was conducted in Maryland for the purpose of keeping uninfested territory free of the beetle, retarding and delaying the spread of the beetle in the lightly infested areas, and to introduce and demonstrate control work in the heavily infested areas. Before entering into a discussion of the retardation work it might be well briefly to review the facts that created a demand for this phase of the work.

The Japanese beetle is a comparatively new insect pest in Maryland. In many parts of the state it is not known, but where it is abundant indications are that it will be one of the worst insects with which Maryland people, both farm and city, have ever had to deal. This pest feeds on over 200 different plants, and it is known that under conditions of heavy infestation losses are large and control expensive. According to a report by the late L. H. Worthley of the United States Department of Agriculture the average annual damage in heavily infested areas

* Heinicke, A. J. 1917. Factors influencing the abscission of flowers and partially developed fruits of the apple (Pyrus malus L.) Cornell Bul., 393.

was determined to be as follows: Field corn, 3½ to 80% of the crop; sweet corn, 35% of the crop; early apples, 43% of the crop; early peaches, 27% of the crop and general farms, $1.76 per acre.

According to the same report, it was estimated that annual expenditures for control in heavily infested areas were as follows: City blocks, $62.80 per block; sweet corn, $2.00 per acre; peaches, $8.00 per acre; apples, $7.15 per acre; estates, $513.00 per estate; golf courses, $618.00 per course, and cemeteries, $225.00 per unit.

It will be recalled that the Japanese beetle first appeared in Maryland in 1926. As soon as the beetle was discovered, University officials, in cooperation with the Bureau of Entomology and Plant Quarantine, drew up a plan to suppress the insect where found, eradicate it if possible, and, at the same time give protection, through quarantine, to non-infested areas of the state. The plan met with favor among the farmers, nurserymen, shippers and fruit growers throughout the state, and they, in 1937, to continue the work on a more adequate basis, obtained from the last legislature $40,000.00 of state funds in addition to funds allocated for quarantine purposes.

It was felt that $40,000.00 was not sufficient adequately to finance a thoroughgoing Japanese beetle retardation program. Therefore, in order to finance adequately the work the state officials, cooperating with the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture, inaugurated a broad Japanese beetle retardation program, stipulating that all work was to be done on a cooperative basis between the State, the Federal government and the local people, with each of the cooperative units paying approximately one-third of the cost of the work. Appropriations and contributions for the work amounted to $95,899.16.

Method of Procedure. For operating purposes, the State was divided into three areas:

1. The uninfested areas
2. The lightly infested areas
3. The heavily infested areas

In the uninfested areas the quarantine work was continued and educational work was done so that all of the people could know the things that they could do to aid the State in keeping beetles out of the free territory. The lightly infested areas involved those areas in Maryland which had one or more towns or localities infested with beetles. In these areas retardation work was done in an endeavor to keep the beetle from increasing in numbers and to delay the time when these minor infestations would develop into larger ones and radiate out into the surrounding country. The heavily infested areas consisted of territory in which the beetles were abundant and doing serious damage. In these areas large scale demonstrations were made to advise the people as to methods

and means of controlling and retarding the development of the Japanese beetle.

Methods of Control. In all of the infested areas, where practical, the following control activities were undertaken.

1. Trapping
2. Spraying
3. Soil Treatment
4. Colonization of parasites
5. Agricultural adjustment
6. Education

Research. Along with the retardation activities, research work was done in an endeavor to improve present control methods and also to find more effective and practical control methods.

Results of Program

Trapping. Approximately 40,000 traps were operated in the State during the year. These traps caught 123,166 quarts or 615.85 barrels of beetles. Traps were operated in 89 cities, towns and villages. Demonstrational trapping was done in five heavily infested areas on farms in Cecil, Baltimore, Kent, Somerset and Worcester counties. The results of the trapping work in the cities and towns are appended.

In an endeavor to determine the adaptability of farm trapping under Maryland conditions and to determine whether or not Maryland farmers considered the use of traps practical, or worthwhile, an intensive cooperative trapping demonstration was undertaken in a selected area involving approximately 19 square miles in Cecil County. The plan called for the operation of one trap to each acre of open land in the area. However, due to failure on the part of the trap manufacturer to deliver an adequate supply of traps all of the farms in the area were not trapped. There were 77 farm properties in the area. Of this number of farms 58 used approximately 4,000 traps. Over 533 barrels of beetles were caught.

According to questionnaires sent out by the University of Maryland. 95.1% of the farmers using traps favored the trapping idea, thought the traps were effective and want the program continued; 2.4% opposed the work, and 2.5% were non-committal.

The most significant accomplishment in trap research this year is the assembly of a trap that can be manufactured complete, with standard or rod, for around 40c, as compared with $1.00 for the present trap.

Spraying. Spray materials are effective in repelling the Japanese beetle. Spraying demonstrations were conducted throughout the State. The larger demonstrations were conducted in Elkton, Princess Anne, Pocomoke City, Baltimore, Beaver Dam, Kings Creek, and Westover.

The spray work at Elkton was undertaken in cooperation with the City to demonstrate the value of spraying shade trees for protection from Japanese beetle damage. The work at the other localities was done for the purpose of finding out whether or not it was possible to

reduce beetles around loading platforms. A reduction of beetles around loading platforms would be decidedly advantageous to shippers in handling produce under the quarantine regulations. Results showed that two applications of a spray of aluminum sulphate and lime reduced the beetle population in the vicinity of loading platforms 80 per cent below that of the surrounding unsprayed territory.

Tests on the efficacy of the protective value of the following spray materials were made on apple and shade trees. The relative efficiency of the several sprays are in the order given.

1. 2 lbs. acid lead arsenate
   3 pints D-X (B. G. Pratt)
   Water, 100 gals.
2. 2 qts. McCormick's Japanese Beetle spray
   Water, 50 gals.
3. 4 lbs. acid lead arsenate
   2 lbs. wheat flour
   Water, 100 gals.
4. 3 lbs. tannic acid
   1 pint nicotine sulphate
   Water, 100 gals.
5. ½ lb. colloidal lead arsenate
   Water, 100 gals.
6. 10 lbs. Derris (1% Rotenone)
   3 lbs. Rosin residue emulsion
   Water, 100 gals.
7. 4 lbs. aluminum sulphate
   27 lbs. hydrated lime
   Water, 135 gallons

The lead arsenate wheat-flour mixture was of value in protecting asparagus. Hydrated lime (25 pounds in 100 gallons of water) applied to soybeans, reduced the average number of beetles per plant from 128 on unsprayed plants to none on sprayed plants.

Dusting. About six acres of sweet corn were dusted, with hydrated lime (55 lbs. per acre) in the sweet corn section of Harford County to demonstrate the efficiency of dust in protecting sweet corn. Due to heavy rains at the time of the dusting the results were not impressive.

Hydrated lime dusted (scattered by hand—250 lbs. per acre) over soybeans reduced the Japanese bettle infestation from an average of 90.5 beetles per square yard to 11.3 beetles per square yard. The disadvantage to this treatment is that following a rain the application must be repeated if protection is maintained.

Soil Treatment. Educational work on soil treatment was carried out in all of the counties of the State. Twenty-three actual demonstrations were made. As a result of these demonstrations many civic organizations and individuals are treating their lawns. Soil treatment is effective in grub proofing for a period of five years. For the most part, soil treatment is applicable only to lawns, cemeteries, golf greens and private estates. It is felt that if all residents in cities and towns would treat their lawns their Japanese beetle problem would be reduced to a minimum. The treatment consists of applying ten pounds of arsenate of lead to 1,000 sq. ft. of lawn.

The *research work* on soil treatment consisted of comparing colloidal lead arsenate with standard lead arsenate. The colloidal lead arsenate was used at a dosage of sixty-six one hundredths (66/100) of a pound (manufacturers recommendation) and the standard arsenate of lead at a dosage of ten (10) pounds (government recommendation) to 1,000 sq. ft. of lawn. The applications were made in June and results were checked in August and September. The average number of living grubs per square foot of soil, at the time results were checked were:

Colloidal lead arsenate	12.26 per sq. ft.
Standard lead arsenate	1.26 per sq. ft.
Check (untreated)	12.6 per sq. ft.

Colonization of Parasites. Parasites are the natural enemies of the Japanese beetle and should afford an ideal way of combating them. Cooperating with the Bureau of Entomology and Plant Quarantine, three hundred and sixty-four colonies of parasites were liberated in Maryland this year. The distribution was as follows:

County	Tiphia vernalis	Tiphia popilliavora	Total
Baltimore	38	.....	38
Cecil	179	34	213
Dorchester	.....	1	1
Harford	39	24	63
Kent	40	2	42
Somerset	1	1	2
Washington	.....	1	1
Wicomico	2	.....	2
Worcester	1	1	2
	300	64	364

In order to get an even distribution of parasites in the heavily infested areas, geological survey maps of the areas were obtained and blocked off into square-mile areas. A colony site was located in each square mile, and a colony of parasites was liberated in each square mile in so far as parasites were available. The most favorable sites were used first.

Agricultural Adjustment. There are crops that many farmers may not be able to grow economically under beetle conditions. It may be economical to replace them by some other crop that is not severely attacked. There are other crops in which planting dates should be changed, or possibly different varieties should be grown from those that are now being grown. Corn is an excellent example. If corn is planted so that it will silk after the first week in August, beetle damage can usually be avoided. To do this, in many localities it is going to be necessary to change the planting date, and possibly change to new varieties.

Cooperating with the Agronomy Department, tests were made in Cecil county with corn this year to determine the most suitable varieties and the proper dates for planting under conditions of heavy Japanese beetle infestation. Ten varieties and two planting dates, May 13 and May 31, were used. The varieties were:

Lancaster Sure Crop	National Hybrid 125
Golden Queen	Hybrid (Indiana) 497-S
Reid's Yellow Dent	Indiana Hybrid 845
Johnson County White	Funk Hybrid 235
Eureka	Funk Hybrid 244

When corn was planted on May 13th no variety escaped damage. At harvest from 47.4% (Eureka) to 78.6% (Reid's Yellow Dent) of the ears showed damage, and the bushel loss per acre varied from 9.3 bushels (National Hybrid 125) to 23.9 bushels (Reid's Yellow Dent), but when planted May 31, four out of the ten varieties had less than 10% damage, and the bushel loss per acre varied from only 1.2 bushels (Eureka) to 14.7 bushels (National Hybrid 125). The greatest amount of damage suffered on any variety flowering after August 10 was 3.3 bushels per acre.

On the basis of this year's work, the Experiment Station corn breeder, Dr. Rothgeb, suggested that under conditions of heavy Japanese beetle infestation Reid's Yellow Dent or some other variety of similar maturity be planted the latter part of May. Wheat seeding will be delayed.

Educational Work

Educational work regarding the Japanese beetle and the fundamentals involved in its control was done in all sections of the State. Splendid cooperation was given in the educational work by extension people, 4-H Club boys and girls, vocational agricultural teachers, grade and high school teachers, Horticultural societies, the Farm Bureau, the Grange, garden clubs, women's clubs and civic organizations throughout the State. The newspapers gave the work excellent support. Practically every newspaper in the State both county and metropolitan, printed one to ten or more stories on the Japanese beetle.

In initiating the work done by the above cooperators, the Department of Entomology of the University of Maryland contributed the following:

Lectures with exhibits	159
Demonstrations	118
Exhibits (fairs and shows)	15
Circulars distributed	80,000

Public Response and Opinion

Cooperation. The people in twenty-two counties were asked to support the cooperative program. The county commissioners in twenty-

one of the counties cooperated. Aside from the cooperation on the part of the county commissioners, the officials in many cities and towns throughout the State aided with the program.

Splendid cooperation in either service, storage space, or appropriations was given by many individuals, business houses and civic and business organizations.

Public Opinion. All cooperating agencies, as well as the general public, are agreed as to the value of all phases of the work with the exception of trapping. There is not an unanimity of opinion as regards trapping, especially under farm conditions. In an endeavor to determine public reaction in general to trapping, a questionnaire was submitted to all individual farmers in the program and to a representative cross-section of residences in heavily infested cities and towns. The following is a summary of the compiled information:

A. Do you like the Japanese Beetle Trapping Idea?
Yes—94.7% No—2.7% Non-committal—2.6%

B. Do you think Traps are Effective in Catching Beetles?
Yes—92.6% No—3.6% Non-committal—3.6%

C. Were you satisfied with the Program and do you Think it Should be Continued?
Yes—95.1% No—2.4% Non-committal—2.4%

Regulatory Work

Regulatory work is necessary in order to guarantee the people living in regulated areas markets in areas not affected by quarantine for nursery and farm products. Regulatory work also serves to retard and delay the spread of the beetle. All regulatory work is done in cooperation with the Bureau of Entomology and Plant Quarantine. All scouting, inspection and certification is done under the supervision of the Federal department. A summary of the regulatory work done during the year of 1938 has not been compiled. The following is a summary of the work done in 1937. In 1937 the regulatory work involved the scouting or inspection of 397 nurseries and greenhouses with 5,404 acres of land and 1,187,672 square feet of glass; certification for shipment of 15,017,713 plants for points outside of the State and 24,477,411 plants shipped between dealers, and 1,968,812 packages of farm products.

Report of Japanese Beetle Trap Collections in Maryland for 1938

County and Town	Number of Traps Set	Number of Beetles Caught
Allegany County		
Cumberland	3,400	37,764
Frostburg	100	12
Westernport	100	.....

County and Town	Number of Traps Set	Number of Beetles Caught
Anne Arundel County		
Annapolis	1,327	1,547
Brooklyn	344	925,037
Eastport	203	34
Jessups	200	2,019
Millersville	100	822
Odenton	100	194
Severna Park	98	32
Shadyside	82	.....
Baltimore County		
Towson	300	13,523
Carney	75	8,219
Catonsville	290	57,864
Cockeysville	50	101
Dundalk	300	23,553,027
Kingsville	50	836
Perry Hall	75	4,814
Pikesville	300	54,313
Timonium	50	530
Calvert County		
Prince Frederick	90	.....
Solomons	64	.....
Caroline County		
Denton	300	212
Federalsburg	240	76
Goldsboro	48	186
Greensboro	125	251
Preston	126	75
Ridgely	160	323
Carroll County		
Hampstead	149	50
Mt. Airy	157	24
Taneytown	148	21
Westminster	476	14,472
Charles County		
Hughesville	64	.....
La Plata	88	32
Waldorf	68	71
Dorchester County		
Cambridge	1,811	2,431,235
East New Market	100	83
Hurlock	100	647

County and Town	Number of Traps Set	Number of Beetles Caught
Frederick County		
Brunswick	306	408,984
Emmitsburg	96	3
Frederick	712	5,739
Jefferson	.....	71
Lander	.....	12,377
New Market	50	8,472
Point of Rocks	550	2,727
Ridgeville	24	9
Thurmont	106	2
Harford County		
Aberdeen	364	2,451,588
Bel Air	98	8,531
Darlington	159	994,340
Havre de Grace	711	7,699,034
Howard County		
Ellicott City	298	7,158
Elkridge	287	50,477
Savage	101	156
Kent County		
Chestertown	311	10,235
Galena	100	379,737
Millington	100	94,052
Prince George's County		
Berwyn	192	2,262
Bladensburg	153	6,926
Bowie	200	1,174
College Park, College Heights	247	9,743
Hyattsville	387	18,840
Laurel	240	32,000
Marlboro	65	11
Riverdale, University Park	337	14,258
Takoma Park	154	1,592
Queen Anne's County		
Centerville	339	22,001
Church Hill	100	508
Queenstown	98	229
Sudlersville	100	44,637
St. Mary's County		
Leonardtown	192	.....
Mechanicsville	50	2
Somerset County		
Princess Anne	375	70,105

County and Town	Number of Traps Set	Number of Beetles Caught
Talbot County		
Easton	603	57,237
Oxford	151	481
Queen Anne	90	273
Washington County		
Hagerstown	2,274	180,891
Hancock	102	.....
Weverton	90	15,403
Wicomico County		
Salisbury	1,990	5,900
Delmar	383	745,000
Worcester County		
Berlin	341	3,865
Pocomoke	385	194,101
Snow Hill	296	4,071
Newark	76	67,517

BUILDING BETTER APPLE MARKETS

CARROLL R. MILLER, Secretary-Manager,
Appalachian Apples, Inc., Martinsburg, W. Va.

We have been listening during this Convention to some very excellent talks on detailed, technical phases of relatively small factors in producing apples—pest control, soil management, reports on exhaustive studies on one small phase of each of these, by specialists who have worked on this particular problem for years. We have been hearing these discussions the past twenty years; have been absorbing them understandingly and applying them intelligently to the business of apple growing. We have studied apple production so intensively, in fact, that we understand it fairly well; so well that we are growing as many apples, nationally, on eighty million apple trees as we did in 1910 on two hundred million apple trees.

We recognize fully that apple production is governed by natural laws; that if these laws are observed, we will have a good crop of good apples; that if through ignorance or shiftlessness we do not fulfill these natural laws, we will have poor apples or no apples. In brief, we are successful as apple growers because we know the rules.

But we have had in these Conventions these past years little or no talk of the ramifications of marketing our fruit; of the natural laws that govern selling our fruit, exactly as natural laws govern growing. We are finding that there are many important facts and factors about apple marketing which we do not know. Until we do know the laws of apple marketing, we can hope for little success in it. I am convinced that permanent help in apple marketing will never come from government

subsidies or legislative schemes. These are only temporary. When we know as much about our marketing as we do about our production, we will be able to do a good job; and not until.

We do not know, for instance, the effect of weather upon apple selling. We have always assumed that apples did not sell nearly so well in hot weather as in cold. That seems natural and understandable and we have excused the apple market time after time on that ground. Yet studies of apple sales covering an entire city and more than two years indicate to us very clearly that apples do sell just about as well in warm weather as in cold. The apple movement in September, a warm month, is just about as great as in December, a cold month, for example. This is being reinforced by the work of a University of Delaware specialist, just getting started on this type of work now. If it is true that apples sell about as well in warm weather as in cold, this means considerable to us; means a longer season for marketing our fruit.

There are many such things we do not know. The size of the oncoming national apple crop is one. The Department of Agriculture admits freely that its apple crop estimates are sorely lacking. We are working with them to get more accurate and more usable reports; have succeeded in getting a $20,000 appropriation for apple crop estimates in the Agricultural Appropriation Bill now shaping in Congress.

We do not know the effect that "cull" apples actually have on prices we receive for our good fruit. Veterans have told us numbers of times that culls cost 25c a bushel on every bushel of good stock. This is probable, but we do not know exactly. We should, in order that we can govern our cull selling intelligently. We do not know the effect of "pressure" on the apple market; nor the effect of relatively high apple prices, with good profit for the grocer, as against very low prices which carry little profit for the grocer but constitute a "leader" which he uses to draw customers into his store. I could go on citing factor after factor which we as yet do not know about; which we must find out about before we can do a really sound job of marketing. We have not learned successful production in two or three years. We have been working on that for more than twenty years. We must start working in the same careful, thorough way on our marketing.

But you want to know something of the results of this apple educational work so far. What have we done the past 2½ years? How have we done it? Our grower-members have now invested a total of 2½ cents per bushel, of their Utility and better *average* crops; one-half cent the first season; one cent a bushel these past past two seasons. Is the price of apples any better for this? Would you have been better off if you had kept that cent-a-bushel in your pockets? You want a straight answer to this fair question. Here's the answer:

In the past 2½ seasons, we have placed five and one-quarter million pieces of apple display advertising at the point-of-sale in 110,000 grocery stores. We have paid for apple advertising in newspapers and magazines with a total circulation of over 4 million copies. We have placed apple recipes and apple publicity in newspapers and magazines

with a combined circulation of around seventy-two million copies. We have used seven radio broadcasting stations at advantageous times. We have personally "worked" 25 of the largest cities of the East, Midwest and South; most of them several times; organizing and educating and interesting The Trade and the grocers in each city in apples in general and our apples in particular.

We reported to you last Spring on the great help given apple-selling last season by the six national week-long apple campaigns by the organized grocers. The amount of extra apple advertising, and apple pushing, and increased apple sales was tremendous. Appalachian Apples secured that grocer-grower campaign, and carried it along for the growers. You know about that. The point we make is that the apple campaign was a comparative infant—in this program of the grocers to win the friendship of the growers. It was started only in 1936. The apple campaign was the biggest the organized grocers had tackled. They learned much from it; perfected the machinery. This year the grocers are doing a tremendous selling job for the bumper crop of citrus. Next year possibly—soon at any rate—apples will be "bumper" again, and we will need that high-geared special selling machine. We must be prepared to enlist that huge assistance from the grocers, to the full; to cooperate with the grocers; and that can be done only by an organization such as Appalachian which knows the grocers and works with them day in and day out. Those campaigns take organization and action on the growers' side as well as on the grocers'. This association would be well worth the cent-a-bushel, year by year, just to secure this huge marketing help from the grocers in bumper crop years.

There are many methods in this promotional field. We are proving the accepted methods, gradually, as to how they work for apples; "holding fast to that which is good." One of the best, we are finding, is "sampling"—giving a perfect apple and one of our apple cook books or other booklets to all customers entering the store. This has a 3-way effect. It delights and impresses the customers, just as they are in the buying mood, with purse in hand. It increases the grocer's apple sales and delights him, and teaches him most effectively about better displays and better selling of better apples. And it stirs active interest and help in apples among the jobbers and wholesalers—The Trade.

I have seen, myself, in a day's "sampling," almost 50% of the store's customers buy apples, *quadrupling* the store's normal movement. We *cannot*, of course, *afford* to place a demonstrator in every store to give away apples; but we believe we have hit upon a store display set which will approximate "sampling" at a cost of a few cents per store.

We have developed, out of hard experience, a practical program by which the wholesaler and the jobber can help out powerfully in this. We reduced this program to booklet form and broadcast the booklet to The Trade; beside setting it before them personally in each city we work. They are a hard bunch to "crack"—the wholesalers and jobbers—but they are softening rapidly, now. In practically every city we work now, we are establishing strong Apple Advisory Committees; leaders in

The Trade, the grocers, the storages and such, to work with us. Some of them are getting right into the job, and will be most helpful, properly organized and marshalled.

We have developed, again out of experience, a vigorous program for recapturing the Deep South Markets which the Northwest has taken away from us by good packing and good merchandising. We actually must convince The Trade, as well as the grocers and the public down in the Deep South that we grow *good* apples—the Delicious and the Winesap, for instance. They believe now that only "cheap" lower quality apples come from here—Yorks, Bens and Ganos—that they must buy their "good" apples from the Northwest. This Association is starting a "sampling" job, sending specimens of our different packs and varieties to the leaders in The Trade in Louisiana, Mississippi, Alabama and other parts of the Deep South, following this up actively with personal visits, letters, lists of our shippers, etc. They use over 2,000 cars of apples a year in that area—and we are getting only 15% of the business, although we can lay our apples down there from 8 to 16 cents a bushel cheaper than the Northwest. Ten cents a bushel means $50 a car, and we're driving *that* home to The Trade.

We led the campaign to have apples included in the program of the million-dollar-a-year Federal Laboratory now being set up near Philadelphia. Apples were included, and now we are working to have the laboratory develop an apple beverage juice. We know the huge amounts of lower grades these juices are using up for other fruits; we know how much apples need this huge outlet for our lower grades. Monday we took another delegation—our fourth—to Washington to work on this. It may mean much in solving our cull troubles.

We have done quite a lot of legislative action. We organized to help defeat Wage-Hour Law Administrator Andrews' ruling on "area of production", which would have brought most of our growers under the 44-hour-a-week schedule, with a 40-cent minimum wage in a few seasons.

We have been battling *abolition* of the Long-and-Short Haul Clause of Interstate Commerce Act. The abolition was recently recommended by the President's Special Committee on Railroads. With the Long-and-Short Haul Clause repealed, the Northwest could lay apples down anywhere in the East for about what the competing carriers would take; a very destructive thing for our marketing. Luckily, we have 72 members of Congress from these four states. The Association is working closely with them in this, and other matters. We took a part in speeding along the 24,000 pounds minimum on apples, carload, into the South, which is scheduled shortly to replace the present 30,000 pounds minimum. And many other things, as the sale bills say, "too numerous to mention"; including our purchase and distribution of 1,100,000 reprints of Dr. Manville's fine article in the Woman's Home Companion for November last, at a cost of $1,950.00.

We have been driving home to the grocer and the trade, in every way possible—conversation, letters and literature—this important fact: that apples are the most profitable fruit for the grocer. If you will look over our Appalachian Apple Book for Grocers, you will find it there, big and plain. We ask you to bear this in mind: Apples are the most profitable fruit for the grocer. Convince *your* neighborhood grocers of this. When we get grocers generally convinced of this, we will have solved a considerable of our apple-selling troubles. For profit is the mainspring for the grocer, the same as for us, and everybody else. When he realizes apples are his biggest profit item in fruits, he will "push" apples accordingly, and sales will boom.

We have plenty of facts to back this up. Apples are the largest of all fruit crops, by far—152 million bushels a year against 90 million for oranges, 46 million for grapefruit (5-year average); so the grocer sells more apples than any other fruit. The spoilage-rate on apples is lowest; a survey published by U. S. D. A. sets the apple spoilage rate in groceries at 8, oranges one point larger, other fruits still higher. Third, the mark-up on apples averages the same as for these other fruits. These three things are important to the grocer. They mean profit or loss to him. They determine his working methods. We have never yet had a grocer dispute us on this; but they have not thought of it before. Help us to spread this gospel among the grocers.

It is in fields like this, we sometimes feel, that we are doing our biggest job—making the grocers friendly toward apples, getting them to understand apples, making them feel that the apple growers appreciate them and are trying to work with them for mutual profit, and, on the other hand, bringing to the *growers* the viewpoint and difficulties and wishes of their *salesmen*, the *grocers*. The grocer is just about as much a part of the Apple Industry as the *grower* is. Without the *grocer*, we could not hope to get our 152 million bushels of apples into the 28 million American pantries. As a partner with us in the business, we must cultivate his friendship and help. The Association feels that it has done a real job, so far, in this. Like most of the rest of our work, it is a long-time job. California Fruit Growers Exchange alone has some 20 men east of the Mississippi whose main job is to build friendship among grocers for Sunkist oranges. You will remember three years ago at the start of this apple "advertising", as we called it then, that the officers warned against expecting quick results; that this should be given a four-year workout, at least, before setting your judgment. With 2½ years behind us, we know better than ever that this is true. We can't remake our marketing in 2 years, any more than our production.

Yet we have *plenty* of *results* already showing—city-by-city campaigns that have increased apple sales, on *exact* warehouse reports, from 7% up to 366%. We have the carlot unloads in eight of our bigger cities, reported by U. S. D. A., showing 18% increase in arrivals of our apples during the two years we "worked" those cities, over the two previous

years. All these *have been* or *will be* set before our members in due time, in The Marketer or in our reports, so we will take no more time with them here. We do *know,* from *all these,* what happens when you get the grocers and the public interested in our apples. That, in brief, is our answer to your *fair* question: "Has the cent-a-bushel I have been paying for this brought results?"

We are glad to report that long steps are being taken toward a *national* program for advertising apples. Washington State Apple Commission stated this Fall that they stand ready to contribute up to one-half of their yearly quarter-million dollars to the national program, whenever the other regions are ready and the machinery is available. Our Appalachian Association has been working steadily toward this since our start. And, during the week January 9 - 13, we joined with New York - New England Apple Institute and New Jersey Fruit Institute in putting on in Montclair, N. J., the most thoroughgoing "working" an Eastern city has yet had on apples. Results have not been fully tabulated yet. They will be interesting and valuable. But the big point is, we are working together in this, coming together rapidly toward a national apple promotion program.

Apples have a real advantage in this promotional work over other fruits; for apples are the most *meritorious* of fruits, in food values, and number of uses, in health values, in color and eye-appeal. In many ways, aside from total tonnage and age, the apple is really "King of Fruits". Our work hence is easier. We can get larger results with fewer dollars. But we must have funds. This is no small job. Our *natural marketing* area, the Central East and South, covers 17 states, with 51 million people. Working that is *no small job.* Every grower should carry his fair share of this expense. You are putting a good many nickels and dimes into getting your apples ready for the market. It is only horsesense to invest one cent in seeing that the market is ready for your apples when your apples are ready for the markets.

And *you* must do it. No one else is going to do it for you. We've tried that, and found out. You, the grower, must make sure the *markets* are *ready* for your apples when your apples are ready for the market. I thank you.

WHAT THE INSPECTOR FINDS IN FRUIT CONTAINERS

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This subject is so broad in its scope and implications that we will only have time to hit a few high spots. It might be well to consider for a moment the word "inspector." When we speak of "the inspector," we usually mean one of the licensed Federal-State shipping point inspectors, or one of the receiving point inspectors in the terminal markets. However, there are many other "inspectors" that have much to do with your fruit from the time it is picked until it reaches the ultimate con-

sumer. The picking foremen, the packing house managers and foremen are "inspectors," or at least they should be. The buyer at shipping point, in the markets—yes, even the storekeeper who buys one or more packages for sale to his customers are "inspectors." And don't forget the housewife—if you don't think she is an inspector, just watch her do her marketing.

The word "inspector" and its companion word "inspection" naturally brings up the subject of grading and standardization, and particularly the grades as established by the Bureau of Agricultural Economics of the United States Department of Agriculture. For it is on the basis of the Federal grades that most of our inspection and certification is done. It might be said at this point that one of the important reasons for the establishment of these U. S. grades was "to provide a common language between buyer and seller on which they could deal with mutual confidence and understanding."

The Food Products Inspection Service of the United States Department of Agriculture was authorized in the "Stimulating of Agriculture Bill" which was passed August 10, 1917. It was a war measure and designed (1) to aid in the quick unloading of cars, when cars were badly needed; (2) to avoid deterioration of food, while disputes between shipper and receiver were being adjusted, and (3) to inform the shipper as to the condition of his products when they reached the markets, thereby enabling him to settle more satisfactorily any financial difference which might arise between him and his receivers. The advantages offered by the service to shippers, carriers and receivers became so evident that Congress included it in the regular work of the Department of Agriculture, and in 1922 broadened its provisions to include inspection at shipping point on products offered for interstate shipment.

The Inspection Service is primarily a service and is in no sense a police or regulatory body. Upon the request of any financially interested party, the inspector will examine a lot or shipment and make a report upon it. He has no authority as to the disposition of the products so inspected, nor does he have anything to do with the settling of disputes or making adjustments. He simply gives impartial and unbiased information concerning the quality and condition of the products which he has inspected. Upon this information disputes between interested parties can be settled with fairness to all sides, and the certificate which he issues is official evidence as to the quality and condition of the product at the time of his inspection. This certificate is accepted by all U. S. courts as prima facie evidence of the facts therein contained.

One of the best ways to judge the value of the inspection service is to consider what use has been made, and is being made, of the service. In 1918 there were 6,069 inspections at receiving points. In 1925 such inspections reached a total of 32,334. The receiving point inspections remained at about the same figure until 1929, when 37,632 carlots were inspected. The maximum of receiving point inspections was reached in 1931, when there were 59,843. From this point on, the amount of these inspections has materially declined. In 1938 there were 49,052 receiving

point inspections. It is expected that the amount of these inspections in the terminal markets will show a further decline, due, perhaps, to better grading and packing at shipping point, and to a better understanding between buyer and seller. I personally think that this better understanding is due, primarily, to the ever-increasing use of shipping point inspection. In the first year this latter type of inspection was available, 1923, there were 72,466 inspections at the point of origin. With the exception of one or two years, there has been a continual rise in the number of these inspections. During 1938 there were 450,065 shipping point inspections.

The first shipping point inspections were made in Maryland in 1925, when 549 carlots were officially certified as to grade. In 1937 there were 2,880 shipping point inspections made in this State divided as follows: Apples, 1,013; strawberries, 339; fresh tomatoes (Green Wraps), 295; potatoes, 685; peaches, 88; and sweet potatoes, 460. Not all of these were carlots, however, some being truck loads. The total value of all farm products under Federal-State inspection in 1938 amounted to almost $2,000,000. Our 1938 figures have not been tabulated.

As mentioned before, the food products inspection service is purely voluntary and no one need have his products inspected unless he so desires. The only exception is in the case of apples and pears for export. Right here it might be well to mention "The Maryland Apple Grading and Packing Law." While this law was passed in 1916, before any Federal grades were fixed, there is a clause in it which states that when U. S. grades are established, they shall be promulgated by the Maryland State Board of Agriculture as the official grades for the State of Maryland. The Maryland law states, among other things, that all closed packages of apples shall bear the names and addresses of the packer, the variety, grade and size. We are asked many times why this law is not enforced. It has not been enforced simply because the apple growers of this State, as a group, have neither insisted nor asked that it be enforced. It will be enforced whenever those interested in the production of apples want it enforced, and make their wants known to the Board of Agriculture.

The grading and packing of apples and peaches in accordance with the U. S. grades is something with which practically everyone in this group is familiar. You all know the defects permitted in the various grades, so there is not much use in going into that phase of "what the inspector sees" at this time. Better, perhaps, would be to bring to your attention some things that, strictly speaking, are not in the grade definitions and rules. First and foremost among these are bruising and slack packs. In an attempt to get a "tight" pack in barrels, very often the runner will not rack the barrel properly and will then pile apples much above the top. When the head is pressed in, serious bruising results, resulting in a slack pack later on. The foot press type of header, used in some packing houses, tends to aggravate this condition. Often the head is pressed in, then released for some reason, and pressed in again. I have seen headers go through this operation three or four

times before the head is finally put in place. Certainly this is not good practice. Too much stress cannot be laid on the proper racking and heading of barrels. If properly racked, the apples need not extend much above the croze ring. In the case of baskets, in most packing houses there is little, if any, attention paid to racking. The basket is piled high with apples and then lidded. It is a tight pack then, but may not be later on.

Some varieties, such as the Stayman, are very easily bruised, especially when they have been left on the trees longer than usual in order to allow them to color up as much as possible. It might be well to observe here that bruising is more perceptible and more objectionable on the more lightly colored apples.

Instances are on record where receivers have registered a formal complaint that the apples were badly bruised, when, as a matter of fact, they were only "kicking" about the color. Another cause for bruising and slack packs is the poor quality of container that is sometimes used. Such containers lose their original shape and bulge out at the sides, causing the fruit to become dislocated.

This brings up the subject of the so-called 1⅕ bushel Eastern apple box. No doubt, with the use of this box, much bruising could be eliminated. Apparently, it was not originally intended that this type of box should be packed "tight." However, the trade is demanding that it be "tight." The result is that the grower has been given 10 or 15% more apples for a bushel. This does not seem to be fair. All bruising, however, is by no means done in the packing house. Many apples are badly bruised in the picking and handling operations before they ever reach the packing house. Again, much bruising is caused by careless and rough handling after packing, both in the packing house and during loading operations. Much of the decay and slack packs which show up later, and about which we have so many complaints, have been shown to be a direct result of this bruising at shipping point. The more liberal use of shredded oiled paper would, perhaps, tend to lessen the amount of objectionable bruising.

Another important factor is color. The consumer buys very much by the sense of sight. It is not hard to conceive of a lot of apples with exceptionally good color, grading U. S. Utility, being more desirable than a car of poorly colored U. S. No. 1 apples of the same variety. I have often thought that the U. S. No. 1 grade for apples should be amended to permit an additional tolerance for minor defects on apples which are highly colored. Anyway, it's something to think about.

It is the common practice in this area to overface as to color. In a great many cases this is carried to extremes and gives the impression that many of the remaining apples are undercolored. I realize, of course, that the trade must want them packed that way else it would not be done, but why should we "kid" each other? All the apples have to be sold to the consumer, so it would seem better to have the face reasonably representative of the remaining part of the contents of the package. It might be well, at this point, to mention the custom that

has grown up among the buyers to purchase on the basis of U. S. No. 1 and to expect "good" color, or in other words U. S. Fancy. This is causing many headaches.

Now as to sizing. It has always seemed to me that too wide a range of sizes is often permitted in the same container. This is particularly true with some of the earlier varieties, where they are packed, say "2 in. and up." The "up" sizes are usually used as the face. The first impression, when the face is removed, is that the apples are undersize. The large sizes merely emphasize the small sizes. It is suggested that any range of sizes greater than ½ inch is objectionable, unless the size is 2¾ or larger.

Now we come to the "irregular" pack, and by this I mean a lot of apples that range from practically no defects in some cases to the full tolerance of 15% in others. Such a lot may grade U. S. No. 1 according to the rules, but there is always danger of a reinspection and reversal as to grade. The tolerances were written into the grades to take care of the so-called "human" element in the grading operations, but it was not intended that half the packages should contain the full 15%.

As to peaches, the inspectors see peaches of many stages of maturity in the same container. Ripe peaches are ideal for local markets, and the harder ones for more distant destinations—but mixed, they are not suitable for either. In an attempt to get a tight pack the harder peaches press into the ripe ones causing bruising and skin breaks, leaving the way open for the secondary infections, particularly decay. Many packs are found to contain much undersized stock, due to sizing apparatus being set too close. There seems to be a tendency on the part of growers to let in as many undersize peaches as the trade will permit. When prices are good, there is always the temptation to pick peaches too green. Terminal market inspectors tell us that many a good peach market has been ruined by the shipping of hard, green peaches. The consumer wants a ripe peach, and with the present methods of car and truck pre-cooling, it would seem advisable, in general, to let our peaches get a little riper before harvesting. I have known cars of really ripe peaches from the Eastern Shore to be sent to New Orleans by pre-cooled cars, and from the wires received by the shipper, they must have arrived in a very satisfactory condition.

Before closing, I want to mention one other thing that the inspector sees. That is the labels on the packages. He knows that in a great many cases they mean very little, if anything. When shippers and growers spend money to develop a good label, it should stand for something. Too many have a couple of labels which are used for their best and second qualities, regardless of how good it is. If conditions are good, the quality under the label is good, but if the growing season does not result in high quality, the pack under each label is reduced in quality. Too often a label means the best or second best that is grown in that particular season, without regard for the seasons to come.

I want to thank the Maryland apple and peach growers, packers and shippers for the very fine cooperation they have given our department and our inspectors. Our relations have been most pleasant.

SOME CONSIDERATIONS IN THE USE OF RUBBER TIRED MACHINERY ON THE ORCHARD AND FARM

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The field of usefulness of rubber tires—that is, pneumatic tires—has been stretched in recent years to include farm tractors. More recently a variety of farm machines have been put on rubber, apparently adding to the comfort and economic advantage of the farmer. It is hard to think of another broad change in farm machinery that has taken place as rapidly as this.

The idea of using rubber tires on tractors is not new as both solid and pneumatics have been used on industrial tractors for many years; and over a period of years many attempts had been made to adapt these tires for use on agricultural tractors. It was not, however, until about 1932 that a special low-pressure pneumatic tire appeared which seemed capable of meeting the varied requirements of service demanded of tractors to be used on the land. Since that time their use has spread by leaps and bounds, not only on tractors but also on a large variety of field machinery.

Of the wheel tractors manufactured in 1935, reports show that 14 per cent left the factories on rubber tires, in 1936, 35 per cent, in 1937, 50 per cent, and in 1938 around 65 per cent. In addition, numberless steel tired tractors were changed over to rubber in the field. While this rapid change in tractors was under way, field machinery was undergoing a similar development and now more than fifty types of machines ranging from the combine to the lowly wheelbarrow have been put on rubber. Practically all the lightweight, so-called baby combines of 5- to 6-foot cut and midget combines of 40-inch cut manufactured in 1938 were sent out on pneumatic tires. Further, one large sprayer manufacturer stated that about 65 per cent of his tractor- and horse-drawn sprayers were mounted on rubber tires in 1938 and that probably 80 per cent would be so mounted in 1939. This in addition to the sprayers mounted on motor trucks.

The advantages of pneumatic tires are many and varied and I can mention a few of them here:

Higher Speeds Possible

Because of the cushioning effect of the tires, greater speeds of tractors and field machinery are possible both in the field and on the highway.

It has been said that when rubber tired tractors first appeared, Barney Oldfield drove one around the Indianapolis speedway at 60 miles an hour. A rather unusual occurrence was reported by a manufacturer in the early days of rubber-tired tractors. A representative of his firm was "pinched" for speeding in a small town in Montana. He was accused of driving 30 miles an hour. Another reported pulling a rubber-tired thresher behind his car on the highway at a speed of 40 miles an hour.

With this higher speed possible on the highways the farmer's investment in mechanical power can be held down. In place of using a motor truck for hauling, a low-cost, rubber-tired trailer can be substituted and his tractor used to pull it. Such tractors have transmissions which make possible speeds from 10 to 30 or more miles an hour. In some instances, of course, equipment for such high speed is not standard, but it can be had at a small additional cost.

In the field, many operations can be performed more rapidly on rubber than was possible with steel wheels because of the reduction of jar and vibration. If grain is not too badly lodged, the small five- or six-foot combine harvester-threshers can be operated at speeds of 4 and 5 miles an hour and can do the same amount of work as the 8- or 10-foot combines with steel wheels which operate at probably 2½ miles an hour. There is no more loss of grain with the small ones than with the large ones.

Plowing and cultivating can be done more rapidly—thanks to rubber. Due to the higher plowing speeds possible, so-called speed bottoms have been developed—bottoms with more gently curving moldboards. Some fairly truthful farmers who have used new speeds and old-style moldboards say the furrow slice "went over the fence". We now see rubber-tired mowers cutting weeds along the highway at speeds that we would not dare to use if the mowers were fitted with metal wheels.

Rolling Resistance

Engineers find the rolling resistance of tractors and other machines is considerably reduced by the use of rubber tires. If the rolling resistance of a tractor is reduced, then it will use less power to move its own weight over the ground and, consequently, more power will be available at the drawbar. By the same token, a pulled machine such as a wagon, or sprayer, if on rubber can carry a bigger load because of the lower rolling resistance.

Tests by the Indiana Agicultural Experiment Station on the application of rubber tires to combine grain harvesters showed a large reduction in pull on both the combine and the tractor. The drawbar pull necessary to move both implements, the report said, was only 1/3 to 1/2 of that required for steel equipment.

In reporting on tests with rubber tires and steel tires on tractors and cane wagons, the Louisiana Station found that with a 2-ton load the draft ranged from one-third to one-half less for the rubber tires. I don't think it is necessary to give the various tire sizes here. As you may know, the cane fields in the south at harvest time are frequently very soft and muddy, with the result that loaded, steel-tire wagons sink in so badly and the soil and trash flow around the rims to such an extent that it is well nigh impossible to move them. The round-section "doughnut" tires cannot sink in so badly and the mud cannot envelop them.

Longer Life

Wear and tear caused by the vibration of the steel-wheeled combine on rough grain fields has made repair costs serious, especially during dry harvest seasons. The Indiana Station reports on comparative vibration tests showed when rubber tires were put on they ironed out much of the shake produced with steel wheels. The severe jolts were reduced in intensity and the minor jolts smoothed out. It would be reasonable to expect less wear and tear on all machines equipped with rubber. As a matter of fact, some authorities claim that the life of rubber-tired machines should be increased around 25 per cent over that of steel-tired equipment.

The agricultural tractor, which depends for its power upon an internal combustion engine, vibrates more than other farm machines, largely because of the explosion reactions which are transmitted from the cylinders to all parts of the machine. If the tractor is on steel wheels this vibration is more or less amplified, much in the same manner as the ticking of the alarm clock is intensified when set on a wooden or metal table top. In the latter case the family watch repairer would suggest placing the clock on a blotter or piece of felt to cut the noise and wear. The mounting of the tractor on rubber tires has the same effect as cushioning the alarm clock—the vibration is reduced and so is the wear. This cushioning effect makes the tractor operator's seat more comfortable. He also gains in comfort because less dust is carried up with rubber tires.

Drawbar Pull and Fuel Consumption

According to tests reported by various agencies in the journal of the American Society of Agricultural Engineers for the past several years, the maximum draw pull of tractors with steel wheels, in low gear is, as a rule, greater than that of the same tractor equipped with rubber tires, but a higher per cent of rated drawbar horsepower can be developed in second and high gears with rubber tires than with steel. Slippage is the controlling factor limiting the load that can be drawn with a rubber-tired tractor, whereas the steel wheeled tractor is limited by the power of the engine. Studies by the Nebraska Station show that by adding a weight of 100 pounds on the rear wheels the drawbar pull may be increased about 54 per cent. This low gear performance on rubber tires, therefore, can largely be corrected by adding weight to the rear tires either by filling the tires with water, adding cast iron weights to the center of the wheels or both. (The drawbar horsepower developed is equal to the pull at the drawbar multiplied by the speed in feet per minute—one mile per hour—88 feet per minute—divided by 33,000.)

The fuel consumption is less with rubber tires than with steel wheels—from 5 to 15 or 20 per cent, depending on conditions.

The following is a typical example of the performance of an up-to-date tractor as tested recently at Lincoln, Nebraska.

On steel wheels the test weight of this tractor was 5300 pounds. Operating at maximum load it developed 31.94 horsepower at the drawbar with a pull of 3394 pounds at 3.53 miles per hour—slip 6.86 per cent.

On rubber tires the test weight was 8025 pounds. Operating at maximum load it developed 39.90 horsepower with a pull of 3506 pounds at a speed of 4.27 miles per hour—slip 7.68 per cent. It will be noticed, therefore, that by adding slightly over 1000 pounds on each rear wheel (wheel weights and water) the slippage was not much greater than with steel but the horsepower was greater.

On fuel economy tests in second gear, 7.94 horsepower hours per gallon were obtained on steel wheels and 9.88 per gallon on rubber.

To check up on the popularity of the use of rubber tires, the Agricultural Wheel Equipment Committee of the American Society of Agricultural Engineers in 1934 sent out questionnaires to a large number of farmers and a summary of replies from 686 farm owners of pneumatic tired tractors indicated a high degree of satisfaction. Nearly 100 per cent of the 451 giving figures on fuel consumption reported savings which averaged 24.8 per cent. The 129 who gave figures of their estimated savings in breakage and repairs reported savings averaging 39.3 per cent of the similar costs for steel-tired tractors. A large portion claimed less packing of the soil, nearly all claimed easier riding, and the majority felt justified in having incurred the expense of buying rubber tires.

A number of other factors should be considered in connection with use of rubber tires on tractors, such as weight transfer, tire pressure, cross section, diameter and field conditions of test, but space and time do not permit. Anyone interested sufficiently in the subject could refer to the February 1933, 1934 and 1935 issues of the Agricultural Engineering Journal, to the January 1938 issue of the Society of Automotive Engineers Journal and to numerous state experiment station bulletins.

So much, for the general considerations of the use of rubber tires on agricultural tractors and field machinery. Now, let us see wherein they would apply to such equipment as orchard sprayers.

Sprayers are among the heavier farm machines, so it might be of interest to draw a few comparisons with the tractor also in the so-called heavy class.

Generally speaking, the functions of the four wheels of a conventional tractor are three-fold, (1) the directional service of the front wheels to guide the tractor, (2) the driving or propelling function of the rear wheels and (3) the weight carrying or transport service, common to both front and rear wheels.

The sprayers for which the application of pneumatics would likely be of most value are of the heavier types such as the two-wheeled units with power take-off or auxiliary engine pump drive or the four-wheel outfit with an auxiliary engine drive.

It is quite evident that much of the vibration of a spray rig would be absorbed by rubber tires just as the vibration of a tractor is reduced. Reliable estimates give an increased life of 20 per cent to pneumatic-

tired sprayers over steel-tired. At the same time the rubber tires reduce rolling resistance by some 15 to 25 per cent, depending on soil and field conditions, as compared to similar units mounted on steel tires. Less rolling resistance means less pounds pull required of horses or tractor. Looking at it another way, with the same pull a 15 to 25 per cent greater load is possible. With pneumatics greater speeds are possible on the highways and byways, a particular advantage when widely separated orchards are to be sprayed and time is limited.

One large sprayer manufacturer, in cooperation with a State agricultural college, reports interesting draft test figures with a four-wheel sprayer weighing 6055 pounds loaded, using different sizes of pneumatic tires and different widths of steel tires under different soil conditions:

In cultivated loose sandy soil the draft was 1210 pounds when using steel wheels 28x5 (front) and 54x5 (rear). By increasing the width of the rear tires from 5 to 8 inches, other sizes remaining the same, the draft was reduced to 975—a reduction of 235 pounds because of 3-inch wider rims on the rear. By using pneumatics, 5.00—17 (front) and 6.00—20 (rear), the draft was reduced to 750 pounds, and by changing the rear from 6.00—20 to 7.00—17, front tires remaining the same, the draft was reduced 20 pounds more, to 730 pounds.

Using the same wheel equipment on firm alfalfa sod, the steel wheels with 5-inch face on rear gave 825 pounds draft and when increased in width to 8 inches gave a 750-pound draft—a reduction of 75 pounds or 25 pounds per inch of extra width. By using pneumatics the draft was reduced to 485 pounds, the same for both sizes.

Where pneumatics for transport service only are required a standard tread should serve the purpose, and this would undoubtedly suit most applications both on the heavy and light outfits.

Directional service on a four-wheeled sprayer, of course, is not important as the outfit is generally pulled (except when mounted on a truck) and does not have to act in the same guiding capacity as on a tractor which, as a rule, has a guide ring attached to the front wheels—steel if steel-wheeled equipped and cast rubber if mounted on pneumatics.

Where tractional service for driving the pump and accessories is required, as on some horse-drawn sprayers and dusters and some pulled machines, the nature of the tread should be such as to minimize slippage. This consists generally of diagonal cleats an inch or more high cast as a part of the tire.

In selecting tires for sprayer service the sprayer manufacturers' recommendations should be adhered to or those of the Tire and Rim Association which gives the tire and rim sizes, air pressures, safe loadings, etc. Frequently dual tires are used on the rear on the heavier outfits to prevent undue sinking in the lighter soils. These of course need not be new tires as there are always plenty of used tires available of practically any size desired.

With the advent within the last few years of small tractors and the wide use of pneumatics, one- and two-plow tractors are being supplied

with so-called sprayer attachments including two tanks, one mounted on either side for stability, with capacities around 100 or 150 gallons. Some manufacturers are said to have developed "baby" spray rigs for small orchardists to encourage the use of these small tractors.

The use of tires on agricultural tractors and field machinery is in its infancy, but the development has been so rapid that the tires in use are mainly adaptations of low pressure or doughnut tires such as are used on airplanes. While considerable research work has been done on pneumatic tires for tractors, the subject of transport wheels had received little attention until recently. It might be of interest to you to know, however, that intensive studies are now being carried on at Iowa State College, Ames, Iowa, under the auspices of the Committee on Transport Wheels of the American Society of Agricultural Engineers. Included in these studies are such things as shock characteristics, rolling resistance with different sized tires, inflation pressures on soils of different types and conditions, soil packing, impact studies, etc.

In a short discussion following Mr. Gray's address, Mr. Sherman Waddell of Graybill Orchard, New Windsor, stated that he had mounted all orchard tractors on rubber, and had reduced fuel bills almost 50%, and had increased the work output of the tractors to a great degree. The steel cleats on steel-wheeled tractors had worn out in a year, whereas rubber tires on tractors in the same orchard were in almost perfect condition, after three years of use. He urged that when tires are used to replace steel wheels, that good, big tires be used. They cost more, but will pay for themselves in a short time, by increased efficiency. He found that rubber tires reduced erosion, as they did not cut up the hill-sides and start gullies as did steel wheels with cleats. He found little difference in tire treads, except that the large diagonal tread was better in spongy, grassy spots. At times he had actually used a rubber-tired tractor to pull a steel-wheeled tractor out of a mire.

ORCHARDING—A CHALLENGE

W. J. WELDAY, Fruit Grower,
Smithfield, Ohio

Every business that has a dollar in it sooner or later reaches the saturation point; the more attractive, the sooner it becomes overcrowded; in short, damaging overproduction occurs. The cycle of production works back and forth as distinctly as the stock market, and when the pendulum reaches the plus extreme, especially when accompanied by other adverse factors, the old condemned principle of the survival of the fittest comes into operation as sort of a last trench defense.

Unfortunately, apple orcharding entered the depression with too much production. The huge plantings of twenty-five years ago were reaching

peak yields, and then you know the story: Foreign markets gone, domestic markets crippled, and citrus consumption constantly on the increase. Results: Prices drastically down, and consumption relatively down, climaxing, we hope, in the sad experience of last year.

Our concern at present is two-fold; first, as an industry; second, as individuals within that industry.

As an industry what important steps can we and must we take to raise the plane of orcharding, both as to prestige and as to profit? One of the most important things is advertising, as has been stressed by Mr. Miller previously on this program. Good and valuable as is our product, we have been keeping our light under a bushel. There is no one who does not appreciate the full value of advertising, but how to carry it through is another matter. It is easy for the citrus interests and Western apple growers. Marketing through cooperatives, the Board of Directors simply vote a certain sum for advertising and it is taken out of the pay check. But with us independent producers advertising is on strictly a voluntary basis. We naturally hesitate about bearing the load of the other fellow whom we know won't contribute, and so our hope of consistent advertising support depends largely upon willingness to cooperate or that urge which comes from operating in the red.

But advertising alone is only half the remedy. No advertising program can be a permanent success unless it is preceded by standardization and research. Appalachian Apples! Ohio Apples! Consumers have no concern about brands as such until they prove their merit; no sense of local patriotism toward Ohio Apples when the term includes everything from culls to fancy, and ofttimes in the same package. The public is a funny concoction; they complain with an air of discrimination, and yet they are as gullible as a sewer. We think their inherited liking for the apple will persist, so we go on feeding them junk. Since the consumer "eats with his eyes", we overface and mislabel, and then cry about citrus consumption practically doubling since 1920, while with the King of Fruits fresh apple consumption has decreased 49 per cent. I'm fully convinced that the opposition to standardized grading is coming from two sources: those whose fruit is not up to standard, and those who want to grade fraudently. And if you don't think the latter is applicable, let me tell you that as I came through Pittsburgh yesterday I saw from your own State a block of some heavy colored, flat tasting, granite textured variety labeled Paragon Winesap. Ways and means of bringing standardization about is too big a subject to develop here. Suffice to say it is coming, and while it is fraught with difficulties, standardization will come whenever we growers want it.

Advertising must furthermore be accompanied with research. The splendid article, "An Apple A Day", that appeared in the November Woman's Home Companion is an example of having something concrete to offer. People haven't forgotten the apple; they like it as much as ever. We have simply let the citrus group steal the show with research, standardization, and advertising; and in this day of scientific attitude

consumers must be constantly reminded of the benefits that research is finding about the apple—health or otherwise. I am glad to know that the October "Apple Bowl" reports the establishment of four regional research laboratories. Such steps as these, coupled with the splendid work of Dr. Manville, forecasts amazing revelations about the chief product that you and I grow. We have just candidly been asleep. As the *Eastern Fruit Grower* puts it: "The air-wave peddler of alkaline concoctions and nostrums would give his right eye for a product with one-tenth the preventive and curative properties found in the apple. * * * But due to stupidity and indifference of those who should be most vitally interested, modern civilization is almost totally ignorant of the food and health and beauty appeal, the greatest appeal known in the field of advertising". And still many of us will sleep.

Another boost to our industry would be cull elimination. If there is a vestige of sound argument for reducing acreage to raise prices, the fruit men should fall for cull elimination 100 per cent. Plowing under wheat means mostly good wheat; withholding culls means just what it says, the cheapest or most worthless part of our output, yet producing the same effect in stimulating prices. Again the chief objectors are among the producers of most cull fruit. I think the most hopeful development in years is the recent action of the Virginia Horticultural Society when, with nearly six hundred present, they voted almost three to one that the cull movement of apples be restricted by law—and Virginia, mark you, a state with a large truck business in culls. Every grower of apples knows that cull selling is wrong; he knows, as the *Ohio Apple Growers Bulletin* states, that it does two vicious things: drags down the price that the trade and public will pay for his good fruit, and tends to disgust the public with apples. And yet WE go on selling and don't take seriously any suggestion toward concerted cull elimination. Even Ohio, a consuming state, isn't sufficiently waked up to support at present such a move.

Again, the industry can be helped as a whole by re-developing foreign markets. These markets have been dwindling in recent years, both because of lack of foreign buying power, and the development of a nationalistic attitude toward their own apple production. Regardless of politics, we can't help but feel grateful to Mr. Hull and his foreign policy when we find apples in the list of products to be benefited by the new foreign trade agreements.

Lastly, by-product development will naturally relieve the glut in production proportionately. I do not feel a modest beginning has been made in this adventure, and I do feel that with the assistance of research there are great untapped resources awaiting an active and intelligent exploring of this particular field. So much for those things affecting the industry as a whole.

What now of the individual? In many respects he is more important than the industry. The tragedy of the thing is that when the industry

of fruit production is at lowest ebb it is then that the individual must save himself solely by his own efficiency. Anyone can sail in fair weather; there are times and cycles when most anyone in the orchard game can make money, but when the violent storm comes, not all can make a profit or even survive, regardless of how they may cooperate, and it becomes a game of strict "survival of the fittest". Even when the plane of the industry is raised, as pointed out above, it becomes again attractive and invites the same overdoing and depressed condition wherein again success falls back on sheer efficiency.

Not all men are equal—at least a Creator could not or would not make us that way—neither are all orchardists equal. We have the good managers and the bad, the alert and the slothful, the extravagant and the thrifty, the man of excesses and the conservative; we have the man with good location, good varieties, good markets, natural or developed, good elevation; we have the man who can plan ahead in matters like the upkeep of his plant, possible change of varieties, mouse protection, a steady supply of young trees coming on to keep up his inventory, etc., and then we have the man who represents the opposite of all this. It is unthinkable that all should share alike in ability to make money or withstand the "depressions" in orcharding. The individual man will make his own personal application of the general factors affecting his industry as a whole. He has his policies to form on advertising, personally and locally; on standardizing his pack, with or without inspection; on eliminating culls; on the use he makes of by-products; he can even delve into research in a limited way. For example, the author discovered on an apparently dying young Virginia Crab tree, that while the grafted roots were dead from root rot, a sturdy young root had developed above the graft, bright and healthy. Investigation showed that this very problem of discovering roots resistant to root disease was one of the main projects of more than one of the State experiment stations. At present, in the author's nursery replant row are several young Virginias with copper wires above the buds successfully forcing roots on the Virginia Crab stocks. Besides, the grower can make use of research in his advertising. Just this week is being published in the County Seat where Welday's Orchard is located the following editorial, a digest of the Manville article, "An Apple A Day":

"It would appear that while the citrus people have been chanting their favorite tunes about the deserving value of their products in the diet, the apple men have not been asleep. The health value of the apple has since the time of Adam been rather taken for granted; but since that did not sound scientific enough for the modern elightened consumer, the apple interests have secured Dr. Ira A. Manville, Ph.D., Director of the Nutritional Laboratory of the University of Oregon School of Medicine, to conduct research into just whether this contention is myth or in keeping with science. Decidedly the latter is being revealed. When Johnny ran to the apple basket, or Dad insisted on eating apple sauce

with his pork, or Mother took a glass of jelly to a sick neighbor, they were quite scientific. They were supplying pectin to the intestinal tract; to quote, 'As a chief source of bulk in the intestinal contents, pectin, with its ability to take up large amounts of water, forms a mass that stimulates essential intestinal activity without injury to the mucous membrane lining'. So Father, Mother, and Johnny were all able to keep their digestive systems regulated without the aid of cathartics; they were keeping their skins clear with the aid of pectin. When it is recalled that 'the chief commercial source of pectin today is the peel of the citrus fruit and the pomace of the apple', it would appear that the apple men have something unusual on the ball."

So, in the last analysis, it is you and I who fight the winning or losing game, and in accordance with how we look after both the industry of orcharding and the business of orcharding. The depression itself can be a disheartening blow or a challenge. If it has been the means of inducing us to grade better, to dig out new markets, to eliminate unprofitable varieties, to follow of necessity better practices, to support advertising and research, to live less extravagantly, it has been a blessing in disguise. If the freeze of three winters ago spurred us to make replacements of hardier stock, or reminded us that we should, if we are to carry on, have a supply of young trees coming on, it too, was a bit of good fortune.

Is the orchard man going to accept the challenge of recent experiences in the fruit industry? The situation isn't any too cheerful. While trees, it is true, are decreasing somewwhat in number, yet production per tree is on the increase; Federal forecasts show a further disparity between apple and citrus consumption; European countries and Canada are furnishing increasing competition; and alas, there is a lot of idle money seeking employment on the part of those who operate apple orchards by subsidy. And yet, something we feel is beginning to stir in this apple game. Time, money, and brains are beginning to assert themselves in ways we scarcely dreamed of ten years ago. We have as good a product to holler about as ever, and if we men producing that product will just stop snoring and start intelligent hollering, there will be some citrus groves before many years converted into balmy parks for Northern Apple Growers.

COMMITTEE REPORTS

President Gardenhour called for Committee reports which were given as follows:

Auditing Committee—Mr. J. G. Harrison reported that the records and books of the Treasurer were in good order, all receipts and expenditures being properly accounted for.

Nominating Committee—Mr. E. D. McCain, Chairman, offered the following nominations:

President—G. William Gardenhour, Smithsburg.
First Vice-President—Joseph G. Harrison, Berlin.
Second Vice-President—A. H. Nofsinger, Cockeysville.
Secretary-Treasurer—A. F. Vierheller, College Park.

Executive Committee—

R. S. Dillon, Jr., Hancock.
W. Lee Allen, Salisbury.
Edmund P. Cohill, III, Hancock.
A. Lee Schrader, College Park.
O. R. Higgins, Hurlock.
G. S. L. Carpenter, Hagerstown.
Lloyd Balderston, Colora.
G. Rust Canby, Silver Spring.
Dwight Walker, Mt. Airy.

Director to Maryland Farm Bureau, Inc., and Maryland Agricultural Society:

G. Rust Canby, Silver Spring.

Delegates to Annual Meeting of Farm Bureau:

H. C. Whiteford, Whiteford.
J. Andrew Cohill, Hancock.

Director—Appalachian Apples, Inc.:

G. William Gardenhour, Smithsburg.

Resolutions Committee—Mr. Fulton W. Allen, Chairman, offered the following resolutions which were adopted without discussion:

RESOLVED: That the Maryland State Horticultural Society being cognizant of the debt it owes to the vision, initiative, encouragement and loyalty of those pioneer members who, through long years have been faithful in attendance and services, desires to do honor to A. L. Towson and E. P. Cohill, by conferring on them the title of honorary life members with all rights and privileges of active members.

RESOLVED: That the Maryland State Horticultural Society convey to Secretary of Agriculture Henry A. Wallace, the sincere thanks and appreciation of the fruit growers of Maryland for his recent action in raising the lead and fluorine residue tolerances on fruit entering market channels. These changes in residue tolerances have been of great help in easing the anxiety of the fruit growers who have been compelled to spray for control of insect pests, yet have been handicapped in marketing of fruit containing chemical residues in excess of the former tolerances.

The Society respectfully requests that further research in toxic properties of spray materials be pursued.

RESOLVED:—That the authorities in charge of the Federal Wage and Hour Law be urged to interpret the regulation affecting the Orchard Industry in such a way that the fruit grower be not further handicapped and forced to greater expense.

Furthermore, we strongly urge that any suggested State wage and hour law be at least as liberal and considerate of the fruit growers' interest as the Federal Wage and Hour Law.

RESOLVED: Whereas, there will be introduced in the next session of the Congress a bill carried over from the last session, known as the Patman Bill, to tax chain stores, and which, if passed, will destroy and disrupt to a great extent this large channel for the distribution of apples,

Therefore, Be it Resolved, that the Maryland State Horticultural Society oppose the passage of such a bill and urge the Maryland delegation to the Congress to use their vote and influence to defeat the bill; and that copies of this resolution be sent to the Congressmen and Senators from Maryland.

RESOLVED: That with a full realization of the desirability of curtailing every unnecessary expense, the Maryland State Horticultural Society, in convention assembled at Frederick, urges the inclusion of three items, essential to fruit growers, in the Governor's budget, and the appropriation by the present Assembly of the following sums for the use of the Department of Entomology, University of Maryland:

First:—The Japanese Beetle Retardation Fund of $40,000.00. This item is to be used in cooperation with the federal, county and local governmental units which participated in the present campaign, the continuation of which is necessary for the protection of the agricultural and horticultural interests of the State;

Second:—A new appropriation of $5,000.00 for the safe-guarding of the strawberry industry which is threatened by three new pests. Maryland ships 50 million strawberry plants and has a fresh fruit production of over a million dollars that must be protected by adequate inspection and certification;

Third:—An item of $3,000.00 to provide for the control and area eradication of a disease of honey bees that is spreading rapidly and which, unless controlled, will jeopardize the apple industry, as honey bees are essential to the pollination of orchard fruits.

RESOLVED: That we hereby express our thanks and appreciation to the President and Executive Committee and Program Committee for this program, to the speakers who have given us the benefits of their research and experience; to the staffs of the Department of Horticulture, Experiment Station and Extension Service of the University of Maryland for their fine cooperation; to the Maryland State Fair Board for their assistance in making our Apple Show possible; to our commercial advertisers and exhibitors and to the management of the Francis Scott

Key Hotel; also to the personnel of the Frederick Armory, and to Mr. E. D. McCain, for their united efforts in making our meetings instructive, and in adding to our comfort and convenience.

RESOLVED: Whereas the fruit growing interests of Maryland being mainly centered in Western Maryland, we feel that the meetings of the Society are better attended, therefore more successful, if held near that section of the State, therefore

Be it resolved, that it is the sense of this meeting that it be recommended to the Executive Committee that Hagerstown, Maryland, be selected as the place for our next annual meeting.

Furthermore be it resolved, that our Secretary-Treasurer, Mr. A. F. Vierheller be especially commended for his work over a period of years in performing the necessary tasks that go into making a meeting smooth-running, educational and successful.

RESOLVED: Whereas some of the members have felt that the discussions on the floor would be of considerable value in the annual proceedings,

Be it resolved that the Executive Committee be asked to consider the advisability of employing a stenographer to help make the record of the meetings more complete.

SPRAYING OF APPLES, WITH SPECIAL REFERENCE TO EFFECTS ON FOLIAGE AND FRUIT

L. A. Stearns, Entomologist, Delaware Agricultural Experiment Station, Newark

Apple growing—the enterprise in which both you and I are interested—is, in the fullest sense of the term, a "big business". Today, if any activity is to receive due consideration, its scope must apparently be emphasized by an impressive array of figures. Such being the case, it is well to recall the facts that apples are grown on approximately one-third of all farms in this country; that the trees, of which about 80 per cent are of bearing age, number more than one hundred million; that the harvested crop usually exceeds one hundred and twenty-five million bushels, with an average value of $175,000,000; and finally, that the amounts expended annually for spraying materials and equipment for the protection of foliage and fruit from attack by insects and diseases reach a likewise tremendous total. And this, of course, is but a single item in the production program.

The operations of an industry of this size and of this character are always subject to certain limitations. Some of these are imposed by nature, some are the result of governmental regulations, while still others are due to variation in the functioning of the small units that compose the group. Frequently, a situation arises in which the combined effect of the several factors mentioned is clearly indicated. The

subject under discussion—the spraying of apples with special reference to the injury resulting therefrom—is a complication of exactly this kind. It includes a well-known but none-the-less complex combination of conditions, which may be enumerated as follows: location, tree vigor, stage of growth, varietal susceptibility, temperature, rainfall, humidity, pressure, dosage, chemical and physical characteristics of spray mixtures, grade requirements, established tolerances for residues, and of the highest importance, the varying ability of individual growers in utilizing to best advantage scientific or other information available.

Spray injury is a relatively new problem, at least as it is regarded today. It is a question which undoubtedly will receive increasing attention in the near future. My personal experience in orchard work, as an investigator, covers a full twenty years. During this time, it has been my privilege to make the acquaintance of a large number of growers both in the East and Middle-West, to view their difficulties at close range, and to attend many of their gatherings at which ample opportunity has usually been given for the consideration of the needs of the moment. It is within this period that the question of spray injury has rapidly come to the fore. A scanning of the proceedings of recent horticultural meetings is sufficient to reveal the growing concern of orchardists in the matter of the finish of the matured fruit.

The circumstances accompanying the development of this problem need only be mentioned. For years, spraying has been the principal means of control for insect pests and diseases of the apple. It has long been recognized, however, that the materials applied for such a purpose—both insecticides and fungicides—fall far short of the ideal. The demand has been, and still continues, for a spray combination of high toxicity, non-injurious to the tree itself, and at the same time, low in cost. The achievement of this objective, in all probability, lies well in the future. To continue—the past two decades have witnessed serious competition on the part of other fruits, the adoption and tightening of federal standards for apples, the announcement of tolerances for lead, arsenic and fluorine, the development of many substitute materials of questionable efficiency for the chief purpose of eliminating the necessity of residue removal, the depression years with low prices and a general curtailment in spraying operations, and a period of drought which favored the building up of a high codling moth population in many areas.

The statements made might suggest or create an unduly pessimistic attitude toward the present situation. This is not the case, however. On the contrary, it has seemed advisable to present the main features of the problem for a proper understanding of it in its several aspects. The requirements of the present federal standards for apples are specific for the various grades. The extent to which the fruit must be free from damage caused by russeting and spray burn as well as from insects and diseases is definitely indicated in each case. It is extremely

difficult, in fact almost impossible, under many conditions to satisfactorily fulfill both of these requirements. Intensive spraying for codling moth control, during the past few years, has undoubtedly been responsible for a considerable amount of russeted fruit. The percentage of the harvested crop, which by reason of such blemishes failed to satisfy the requirements of the U. S. No. 1 grade, has frequently been sufficiently high so that the loss in this respect has partially or wholly offset the increase in worm-free and otherwise uninjured apples.

The question concerning the best procedure to follow in the growing of high quality fruit cannot be fully answered at the present time. Practical experience, observations and the results of past research have indicated certain things that should be done and certain things that should not be done. Such suggestions will later be made. Work now in progress in many states will certainly be of value in this connection. In Delaware, an orchard spraying investigation is being conducted cooperatively by the Departments of Plant Pathology, Chemistry and Entomology of the Delaware Station*. Various fungicidal and insecticidal combinations commonly applied on apple in our State are being studied with the immediate aim of developing a spraying program effective in control of diseases and insects and at the same time productive of a crop with a minimum amount of russeted fruit. The planting utilized for test purposes is a block of 21-year-old interplanted Jonathan and Stayman apples. Data were recorded for Jonathan only, in 1938, since the Stayman crop was very light.

The schedule of applications included a delayed dormant spray, 2 pre-bloom sprays, a full-bloom spray, a petal fall spray and 10 cover sprays, 6 for the first-brood of codling moth spaced at approximately 7-day intervals and 4 for the second-brood, each about 12 days apart. In so far as insecticides are concerned, the several treatments under test were identical in the case of the early sprays, all of them including lead arsenate and hydrated lime in the petal fall and first cover. They varied, however, with respect to the fungicide employed; that is, liquid lime sulfur, flotation sulfur or a combination of the two. Commencing with the second cover spray, two comparable series of plots were established for continuance thruout the remainder of the season: first, a lead arsenate-lime series with this insecticide alone and in combination with Bordeaux Mixture and also with seven proprietary insoluble copper compounds—ZO, OXO-Bordeaux, Coposil, Copper Hydro, Basi-Cop, Cupro-K and Grasselli Compound A; and second, a fixed nicotine-oil series with Black Leaf 155 alone, with oil and in combination with the same copper fungicides mentioned above. All of the commercial products were used in accordance with the recommendation of the manufacturer.

The season of 1938 was well-suited for a study of this kind. The first four months of the year were extremely mild, with the mean tem-

* Acknowledgement is made herewith of the collaboration of Dr. K. J. Kadow, Associate Plant Pathologist, and Mr. M. W. Goodwin, Analytical Chemist, in the investigation under discussion.

perature considerably in excess of normal and with precipitation for the entire period below normal. April was "the mildest April since 1929 and the driest April since 1926." Both May and June, on the contrary, were somewhat cooler than usual and had abundant rainfall. July was warm and wet, with the mean temperature slightly in excess of normal and with precipitation much greater than the average. In general, the first half of the month was dry and sunshiny and the second half humid and mostly cloudy with almost daily rains or showers. August was very warm and was deficient in rainfall, conditions which were immediately reversed with the coming of September. Obviously, a season characterized by such extremes should increase the possibilities for spray injury and estimates of the efficiency of spray mixtures under test should be more reliable than in a year more closely approaching the average.

The recorded data for 1938 indicate that the natural infestation of codling moth in the experimental block was extremely high, since but 5.8 per cent of both dropped and harvested fruit in the case of the untreated check was free from injury by this insect. In the lead arsenate-lime series, lead arsenate (3 pounds) and hydrated lime (5 pounds) produced 50.8 per cent clean fruit. Foliage injury was very severe. The combination of lead arsenate (3 pounds) and Bordeaux mixture (3-5) proved most effective with as high as 71.1 per cent of the crop uninjured. The correction of arsenical injury was excellent and the amount of russet from light to moderate and largely attributable to the combination of liquid lime sulphur, lead arsenate and lime applied in the petal fall and first cover sprays. Considering the several insoluble copper compounds collectively, when used at the recommended rates in combination with lead arsenate (3 pounds) and hydrated lime (5 pounds), the average per cent of clean fruit for the group was 42.4 per cent or 28.7 per cent less than recorded for the Bordeaux-lead arsenate treatment. Correction of arsenical injury was variable—from slight to very good—and the amount of russet generally and favorably light. The lower efficiency of these insoluble copper fungicides is undoubtedly due to the physical characteristics of spray mixtures of such compounds, which are unable to produce desirably high deposits of copper and arsenic on foliage and fruit. Their inability in this particular is evident in the following comparative figures for analyses of residue on leaves expressed as micrograms per square inch: Bordeaux with lead arsenate—copper (173.1) and arsenic (328.2); average for insoluble copper compounds with lead arsenate—copper (71.7) and arsenic (193.7). Results in the fixed nicotine-oil series were very unsatisfactory and possibly due to the increased interval between second-brood cover sprays applied during a period of frequent and heavy precipitation. Black Leaf 155 (8 pounds) alone produced 46.1 per cent clean fruit. With oil (2 quarts) and used on the recommended, decreasing 8-6-4 basis, it was slightly more effective (50.5 per cent), but, when combined similarly with oil and Bordeaux mixture (3-5), it was decidedly less effective (33.8 per cent). The average

per cent of clean fruit for the insoluble copper compounds with Black Leaf 155 and oil was 47.3 per cent, a control somewhat better (4.9 per cent) than that previously noted for the same products with lead arsenate. But 19.9 per cent, however, of the fruit in the case of the insoluble coppers-lead arsenate group was wormy as compared with 42.2 per cent for that from the insoluble coppers-fixed nicotine-oil plots. Furthermore, in the latter instance, the amount of russet—moderate to severe—was sufficiently great so that a high percentage of the crop fell within the unclassified grade.

Returning, now, to the theme of this paper —"spraying of apples with special reference to effect on foliage and fruit"—for some years, both at meetings and on the occasion of frequent visits to many growers in the several states in which I have worked, I have repeatedly emphasized the personal aspect of this and related questions. Control difficulties, whether with insects or diseases, and the spray injury and spray residue problems resulting therefrom on fruit and vegetable crops are usually, in the last analysis, the concern of the individual grower. The fence which separates one property from another is likewise, and all too frequently, the dividing line between effective control of rosy aphis, codling moth, scab, bitter rot or other troubles on apple and adverse conditions under which serious losses are sustained, year after year. This statement may be still further restricted and applied to but a single planting in a given orchard, or again, it may be expanded to include areas of varying size in a county or state. Any situation of this kind indicates unwillingness on the part of either an individual or a community to isolate the causes or conditions responsible for infestation or infection and to employ the necessary remedial measures.

Spray injury on foliage and fruit is the sequel to failure in the control of insects and diseases. When insect populations are high and diseases are threatening, frequent and heavy spraying is necessary and injury is at a maximum. On the contrary, when pest disturbances are of little concern, many of the sprays in the recommended program can be dispensed with and injury is, or should be, negligible. These are the extremes and both are encountered in most localities. The majority of orchardists, however, confronted with average conditions must endeavor through intelligent spraying procedure to secure a reasonable balance between efficiency in control on the one hand, and spray injury on the other. Certain of the factors contributing to such injury have been pointed out in the past and every well-informed grower is familiar with them. Briefly, all of us know that weather—temperature, rainfall and humidity—is probably the most important cause of injury resulting from the application of the spray materials now in common use. When the weather is very hot and dry we can expect, and we usually experience, sulfur burn; when it is very cool and wet, on the contrary, we can expect, and we usually experience, copper russet. After a period of excess rainfall, such as occurred in late July of the present year, conditions are favorable for arsenical injury and injury of this type

usually occurs. In addition, experience has taught us that certain materials are definitely incompatible and the use of such combinations should naturally be avoided. Furthermore, we are aware of the facts that the possibilities of injury are generally greater early in the season, that trees of low vigor usually suffer most severely, and that certain varieties are decidedly more susceptible than others. Careful consideration by those responsible for spraying recommendations is always given to the known factors involved in spray injury both in the planning of the annual spray program for apples and in the more specific advice issued from time to time as necessitated by seasonal conditions. The grower, in turn, should exercise judgment and use every precaution in adapting such advice to his particular needs.

SOME APPLE TREE STOCK RELATIONSHIPS SEEN IN NEW ENGLAND AFTER 1938 HURRICANE

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A hurricane in New England on September 21, 1938, blew hundreds of thousands of apple trees out of position and many were almost completely uprooted. The two principal varieties McIntosh and Baldwin were in an excellent state of vigor and carried good crops of fruit. All of the trees observed were growing in sod which generally was luxuriant. Just prior to the wind the soil had been super-saturated with 10 or more inches of rain. This almost "fluid" condition of the soil allowed the trees to change position or to be completely uprooted by the repeated gusts of wind. The damage in some cases was done in a few minutes and in other locations, trees continued to go over for two hours or the duration of the storm. Besides the loss of the fruit crop there was much limb injury to some varieties but in this study only uprooting will be considered. Everyone was astonished at the shallowness of the apple roots. In many instances after the storm, the roots were out of the soil and it was only with close scrutiny that it could be determined where they had come out of the sod. The tree damage was very much related to exposure to the wind, being most severe on slopes facing the wind. In many instances trees on elevated level ground above the slope were not damaged.

The uprooting of these trees can be considered from several points of view. The one chosen for this study is the scion-stock relation. It appeared to be a perfect opportunity to relate the results of root firmness to several of the scion-stock hypotheses. Three of the current ideas will be considered: (1) The crown of the tree has a dominating influence on the properties and characteristics of the stock roots. (2) The trunk of the tree is the part which gives specific properties and characteristics to the stock roots. (3) Erect growing trees have deep penetrating root systems. The scion may influence the roots in many respects contributing

to their firmness in the soil: there is the ratio of their weight to that of the top, then the number of laterals, their size, arrangement, rigidity, declivity and fragility. The secondary laterals may contribute by their frequency, angle of divergence, length, and fragility. With a young tree the small roots and fiber will aid in its ability to cling to the soil. It will be assumed that the stock was French crab seedlings, but no one will venture a guess as to the amount of scion rooting that may have occurred. There were at least six orchards on dwarf stock within the area of severe damage.

Nearly a month was spent in observing uprooted trees in Connecticut and Massachusetts, and since then much information has been gained from experience with discarded trees which are being pulled out by tractors in Maryland, Virginia and West Virginia. It is expected that the latter trees will give evidence clarifying the different ability to withstand the storm shown by certain varieties in New England. Also they will increase the records of root characteristics associated with varieties. So far in this study about 400 photographs have been made of roots of mature trees. No one knows why certain trees and certain varieties responded to the storm as they did. For this reason, the study has been extended into Maryland and Virginia where discarded trees are being removed by tractors. These trees exhibit great differences in ease of extraction, and in certain parts of orchards the trees will break off rather than be extracted, showing a firmer soil attachment.

A common statement heard in the storm devastated region of New England was, "My Macs are all down." Because of the prominence of McIntosh and the inability of the trees to withstand the storm the study soon began to revolve about this variey and using it as a comparison. Such varieties akin to McIntosh as Cortland, Macoun, Milton, and Early McIntosh fell before the wind as readily as did McIntosh. In one orchard 50-year-old Fameuse trees remained standing while the adjacent rows of McIntosh trees were mostly down. The following groupings of trees as to their ability to grip the soil was made from observations where they stood close to McIntosh. The trees of a few varieties which seem to be less stable than McIntosh are: Astrachan, King, Transparent, and Gravenstein. Another lot of varieties which, though showing some trees blown over, were more root-firm than McIntosh, are: Baldwin, Ben Davis, and Delicious. A last group of varieties were very stable and showed no uprooting. These are: Duchess, Fameuse, Fall Pippin, Golden Delicious, Pound Sweet, R. I. Greening, Spy, Steele's Red, Sutton, Wealthy, and Williams. The uprooting of apple trees is closely related to varieties.

The second hypothesis to be tested in this study is that of the trunk of the tree is the part which gives specific properties to the stock roots. Trees top-worked to McIntosh will be a case for consideration. This variety was found top-worked, on Baldwin, Ben Davis, Black Twig, Fall Pippin, Limbertwig, Steele's Red, and Wolf River, and in every case they were uprooted. The influence of the trunk on the root system was

not sufficient to keep these top-worked trees from blowing down. Most of them had been stable when they carried their own tops. It appears that the McIntosh crown has more influence than the trunk variety on the makeup of the root system. One McIntosh top-worked on Maiden Blush and another on Stark were found, both standing. This may be insignificant but recently it was observed that Maiden Blush had a deep root-development. These top-worked trees were few in number and usually not enough of their roots were exposed to observe whether they were similar to those under standard McIntosh trees. Likely they would not be, for the gross root-structure had been developed before the top-working was done.

Two instances of self-rooted McIntosh trees are known in the storm area. At Storrs, Connecticut, there is one tree that stood while the tree, a different variety, on either side of it had blown over. At Amherst, Massachusetts, are a dozen or so self-rooted McIntosh trees which were severely damaged by the storm. They are standing on a very poor soil location and some of the trees were not symetrically rooted at the time they were planted.

Much interest will likely be shown in the ability of dwarf trees to stand this storm for they are not supposed to be stable in strong wind. In one Connecticut orchard, standard McIntosh were "filled" with dwarfs. The trees were not damaged badly but the standards stood better than the dwarfs. Another orchard in Connecticut has dwarf McIntosh. The trees on Doucin stock stood the storm while those on Paradise stock went over, as did many of the standard McIntosh in this orchard. A report from a dwarf orchard of four varieties in New Hampshire states that only three trees were down. In a dwarf orchard of mixed varieties about half of the tees were down, but the adjacent standard McIntosh trees suffered badly. At Amherst, Massachusetts, McIntosh on East Malling stocks X, XIII, and XVI stood better than standard trees. Those on stocks I and XII were more exposed to the wind and did not stand so well. It may be said that dwarf McIntosh trees in general stood about as well as standard trees.

An appreciable number of standard trees were found broken at the graft union, perhaps to the extent of one or two percent of all blown-down trees examined. The Gravenstein variety was the worst offender. Brittle roots was the chief cause of this variety going over, for rarely were any roots exposed on the damaged trees. From the exterior, these broken unions did not show irregular development, but on the inside it was very evident that the wood fibers terminated at the graft union presenting a weakened condition. A similar percentage of tractor-pulled trees have broken at the union. In some cases it appears that in the early life of the trees the wood fibers extended across the region of the unions, but as the trees matured the unions became well-marked regions with the fibers not extending across them, and with more age, bark was deposited between the new wood of the scion and stock.

The common explanation given in New England for certain varieties being uprooted more than others is that they were vigorous, had large leaves, and their compact crowns offered more resistance to the wind. It appears that the ratio of roots to top should be considered in these cases for perhaps the tops are out of proportion to the roots. To consider further the hypothesis that the crown of the tree determines the specific properties of its roots, take Delicious, Duchess, and Wealthy trees which were quite stable in the storm. They are very resistant to extraction by tractors. Frequently the trunk breaks without lifting the roots. The root system of Delicious is coarse and inclined to be deep. The roots of Duchess and Wealthy besides having good lateral development have many vertical roots under the trunk. The author has gained the impression after seeing many tractor-lifted Wealthy trees that they have a large proportion of roots to top.

A remarkable observation is that the roots under Delicious, Duchess, Wealthy and Maiden Blush tops when exposed by tractor-extraction, exhibit root-systems of greater depth of development than any of the wind-lifted trees of other varieties in New England. Perhaps this is the explanation why the first three kinds were found stable to the wind. The forms of deep-rooting may be of three types: (1) lateral roots having a great inclination from the horizontal, (2) vertical roots descending from the more or less horizontal laterals, (3) vertical roots descending from the center of the root system or sub-central development. Ben Davis, Wealthy, and Duchess have a strong development of roots below the laterals in the center of the root system, while Baldwin, Transparent, Gravenstein and Delicious are barren of roots in this position. McIntosh is just as free of this sub-central development. The roots under McIntosh tops were always smaller and more pliable than those influenced by Baldwin tops. These tendencies in development may be varietal expressions of either the scion or the root. The magnitude of the development may be a function of age and soil environment. In New England among the uprooted trees there were no examples of a tendency to root deeply, except perhaps Ben Davis and Transparent. This surface rooting may be characteristic of the crown varieties of the wind-damaged trees. It is possible that roots growing under a dense sod with adequate moisture and surface-applied fertilizers, find conditions most favorable for their development near the upper surface of the soil, but this should not prohibit the expression of varietal tendencies from appearing in other positions of the system and at different levels. The shallow rooting in New England of uprooted trees may be accounted for by the presence of an impervious hard-pan below a thin surface soil. In this connection two orchards were found in which the holes had been blasted previous to planting the trees but these trees were no more stable to the wind than were those in orchards where no blasting was done. Work is now in progress of extracting some of these varieties growing in deeper soils, to determine their rooting habits under such conditions.

This work was undertaken to relate the root-firmness of varieties to some scion-stocks hypothesis. There seems to be nothing contrary to

the premise that the crown of the tree has a dominating influence on the stock roots, if it is assured that the roots were similar at the time of propagating, for the uprooting of trees was very definitely related to scion varieties. The second hypothesis; that the trunk of the tree is the part which gives specific properties to the stock roots, was not well supported, inasmuch as McIntosh, when top-worked, on other trees which in themselves were stable to the wind, caused the trees to become unstable. The third hypothesis, that erect-growing trees have deeply-penetrating root systems may or may not be supported by results. It may be considered reasonable that deep-rooted trees would show greater root firmness than shallow-rooted trees. Field observations showed two erect-growing varieties, Spy and Sutton, were root-firm in the wind while two others, Macoun and Transparent, were not. The benefits of deep-rooting, if such was the case, might have been offset by fragile roots. The lowheaded R. I. Greening was extremely stable in the storm.

WHAT THE 1938 MARYLAND APPLE INSECT SURVEY SHOWS

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For a number of years the Department of Entomology of the University of Maryland has stressed the importance of thoroughness and timeliness of spraying for the control of fruit insects. We have also stressed the importance of proper equipment efficiently handled. The past year we stressed the importance of growing clean fruit. Yet, in spite of our persistence, the 1938 apple insect survey from 44 commercial orchards throughout the state shows that insects continue to persist.

One of our great entomologists made the following statement: "The struggle between man and insects began long before the dawn of civilization, has continued without cessation to the present time, and will continue, no doubt, as long as the human race endures. It is due to the fact that both man and certain insect species constantly want the same things at the same time. Its intensity is owing to the vital importance to both of the things they struggle for, and its long continuance is due to the fact that the contestants are so equally matched. We commonly think of ourselves as the lords and conquerors of Nature, but insects had thoroughly mastered the world and taken full possession of it long before man began the attempt. They had, consequently, all the advantages of a possession of the field when the contest began and they have disputed every step of our invasion of their original domain so persistently and so successfully that we can even yet scarcely flatter ourselves that we have gained any very important advantage over them. The war still goes on and neither side can claim a victory." Our 1938 survey shows that the war is still in progress between the fruit growers and the insects, and in certain instances the insects have the grower in a close spot.

A doctor was listening to a lecture on the codling moth by an entomologist. When the lecture was over the doctor asked the entomologist if the worms would hurt anyone if they ate them. The entomologist said "No, they would not". The doctor replied, "Then why make all this fuss about it?" If we all could take the attitude of the doctor, many of our worries would cease, but unfortunately the buying public does not care to eat worms regardless of whether or not they are harmful.

An analysis of the codling moth survey shows that out of the 44 orchards surveyed, 11 orchardists grew an average of 94.3 per cent of fruit free from worms and stings. Another group of 6 orchardists grew an average of 88 per cent of fruit free from worms and stings. The remainder of the orchards had an average of 72 per cent free from worms and stings. The above figures do not take into consideration the injuries to the fruit caused by curculio, aphid, green apple worm, apple red bug, and the various diseases. Neither do they take into consideration the ground apples. It is evident in many instances, when the grading process was over, that practically all the apples fell in the utility class or lower.

Fruit growers can improve their quality of fruit by adhering to a few simple practices. They should scrape and band their trees with chemically treated bands, screen in packing houses, apply their sprays at the time recommended by the Department of Entomology, and, finally, convince themselves that a tree cannot be sprayed properly unless it is sprayed from the inside as well as from the outside, and also sprayed at the top as well as at the bottom.

What fruit growers need most is not new substitutes for arsenate of lead but proper timing and thoroughness of applications of the materials now recommended.

The 1938 apple survey, in addition to revealing a serious situation in regard to codling moth, shows a definite build-up of San Jose scale, and unrecorded observations showed a build-up in European red mite. Rosy aphis caused a heavy loss to fruit growers in 1938 and precautions should be taken against this pest as well as against red mite and scale in the 1939 program. The results of the 1938 apple survey are shown in Table 1.

Table 1.—*Maryland Apple Insect and Disease Survey*, 1938.

Hancock Section

Orchard Number	VARIETY	Percent Worms	Percent Stings	Percent Curculio	Percent Scale	Total Insect Injury	Percent Scab	Percent Cedar Rust	Percent Fruit free from Insect and Disease
1	Jonathan	0	1	1	0	2	0	0	98
1	Delicious	4	1	1	0	6	1	0	93
1	Delicious	2	2	2	3	9	5	0	86
1	Stayman	2	2	0	3	7	1	0	92
1	York	0	0	0	2	2	1	0	97
2	W. Banana	7	8	3	0	18	0	0	82
2	Grimes	3	11	3	0	17	0	0	83
3	Jonathan	3	4	0	1	8	0	0	92
3	Delicious	3	8	1	0	12	0	0	88
3	York	17	40	0	0	57	0	0	43
3	Rome	8	18	4	0	30	1	0	69
3	Ben Davis	8	17	4	0	29	0	0	71
3	Va. Winesap	1	11	0	0	12	1	0	87
4	Grimes	3	12	1	0	16	0	0	84
4	York	3	8	3	0	14	0	0	86
4	Grimes	1	3	1	0	5	0	0	95
5	Stayman	1	1	1	0	3	0	0	97
5	Va. Winesap	1	7	1	0	9	0	0	91
6	Stayman	0	3	0	0	3	1	0	96
6	York	1	6	1	0	8	0	0	92
7	Rome	3	4	1	0	8	0	0	92
8	Rome	1	1	2	0	4	0	0	96
8	Grimes	3	6	0	0	9	0	0	91
9	Delicious	2	9	1	0	12	0	0	88
9	Jonathan	8	7	0	0	15	0	0	85
9	York	1	12	1	0	14	0	0	86
10	Jonathan	3	12	1	0	16	1	0	83
10	York	2	18	1	0	21	0	0	79
	Average	3.2	8.6	1.2	.3	11.8	.4	0	86.5

Hagerstown Section

Orchard Number	VARIETY	Percent Worms	Percent Stings	Percent Curculio	Percent Scale	Total Insect Injury	Percent Scab	Percent Cedar Rust	Percent Fruit free from Insect and Disease
11	York	24	14	0	0	38	1	0	61
12	Stayman	1	3	2	0	6	4	0	90
13	Ben Davis	1	3	4	13	21	0	0	79
13	Stayman	1	3	2	6	12	3	0	85
14	Stayman	10	17	3	22	53	16	0	27
14	Stayman	5	5	6	3	19	33	0	48
14	Grimes	2	2	2	8	14	0	0	86
15	Stayman	19	12	3	6	40	3	0	57
15	York	12	20	1	31	64	0	0	36
16	Jonathan	31	18	3	0	51	0	0	49
16	Delicious	26	40	1	0	67	0	0	33
16	Stayman	2	42	0	0	44	0	0	56
16	Va. Winesap	2	32	0	0	34	0	0	66
17	Grimes	3	5	2	0	10	0	0	90
17	Jonathan	4	12	0	0	16	0	0	84
17	York	2	15	0	0	17	1	0	82
17	Rome	5	8	0	0	13	1	0	86
17	Rome	5	19	0	0	24	1	0	75
18	York	3	20	3	5	31	0	0	69
18	Black Twig	2	16	1	0	19	5	0	76
18	Gano	2	9	1	0	12	0	0	88
18	Va. Winesap	1	16	2	0	19	0	0	81
18	Stayman	5	13	6	1	25	0	0	75
19	Va. Winesap	30	23	10	50	113	6	0	0
20	Va. Winesap	6	25	0	1	32	0	0	68
21	Va. Winesap	18	17	1	7	43	32	0	25
21	Black Twig	1	7	1	5	14	12	0	74
21	Stayman	3	10	1	4	18	3	0	79
21	Rome	16	24	1	0	41	1	0	58
22	Black Twig	19	14	16	0	49	7	0	44
22	Va. Winesap	1	8	3	0	12	1	0	87
22	Ben Davis	25	10	7	0	42	0	0	58
23	Stayman	1	2	2	1	6	7	0	87
23	York	1	5	1	23	30	14	0	56
24	York	5	8	3	8	24	0	0	76
24	Stayman	2	8	0	0	10	1	0	89
25	York	1	7	1	23	32	8	0	60
26	Grimes	25	33	0	0	58	0	0	42
27	Grimes	22	37	0	1	60	0	0	40
28	Delicious	1	10	6	14	31	2	0	67
	Average	8.3	14.8	2.3	5.8	31.2	4	0	64.80

Frederick Section

Orchard Number	VARIETY	Percent Worms	Percent Stings	Percent Curculio	Percent Scale	Total Insect Injury	Percent Scab	Percent Cedar Rust	Percent Fruit free from Insect and Disease
29	Jonathan	8	5	0	0	13	4	0	83
29	Starks	6	15	1	0	22	7	0	61
29	Stayman	17	15	0	0	32	2	0	66
30	Delicious	3	9	1	0	13	9	0	78
30	York	3	9	1	3	16	3	0	81
30	Va. Winesap	1	10	5	0	16	3	0	81
31	Jonathan	3	6	0	0	9	0	0	91
31	York	5	6	0	7	18	9	0	73
31	Stayman	4	10	1	6	21	38	0	41
32	Jonathan	1	7	0	0	8	0	0	92
32	Grimes	0	1	0	0	1	0	0	99
32	Stayman	1	4	0	0	5	8	0	87
32	Rome	3	12	3	0	18	8	0	74
32	York	1	4	0	0	5	0	0	95
32	Black Twig	3	2	0	0	5	12	0	83
33	Black Twig	18	25	13	0	56	5	0	39
33	Stayman	3	9	1	0	13	5	0	82
33	Rome	10	11	3	0	24	5	0	71
33	Grimes	1	6	8	0	15	1	0	84
34	Stayman	0	15	0	0	15	0	0	85
34	Va. Winesap	0	10	0	0	10	2	0	88
	Average	4.3	9	1.7	.7	15.7	5.7	0	78.30

Eastern Shore Section

Orchard Number	VARIETY	Percent Worms	Percent Stings	Percent Curculio		Percent Scale	Total Insect Injury	Percent Scab	Percent Cedar Rust	Percent Fruit free from Insect and Disease
35	York	26	11	0	0	37		0	0	63
35	Stayman	27	22	2	1	52		34	0	14
36	Starks	7	15	0	0	22		2	0	76
36	York	8	22	1	1	32		0	0	68
36	Rome	15	11	2	0	28		24	2	46
36	Va. Winesap	9	10	0	0	19		6	0	75
37	Grimes	4	7	0	0	11		0	13	76
37	York	14	9	2	0	25		1	7	67
37	Black Twig	11	23	0	2	36		2	0	62
37	Stayman	5	21	1	0	27		7	0	66
38	Starks	1	3	1	0	5		0	1	94
38	Stayman	10	4	0	0	14		23	0	63
39	Starks	12	3	1	0	16		1	0	83
39	Grimes	1	9	0	0	10		2	0	88
40	Stayman	8	22	0	0	30		16	0	54
41	York	3	14	1	0	18		2	0	80
41	Stayman	2	16	0	0	18		3	0	79
41	Va. Winesap	10	30	1	0	41		4	0	55
42	Stayman	19	24	0	0	43		2	0	55
42	Rome	8	10	5	0	23		22	0	55
42	York	1	7	0	0	8		26	0	66
43	Stayman	20	30	0	2	52		1	0	47
43	Nero	32	19	2	21	74		0	0	26
44	York	1	6	3	0	10		0	1	89
44	Stayman	1	3	0	0	4		0	0	96
44	Stayman	0	0	0	0	0		7	0	93
44	Va. Winesap	0	1	0	0	1		10	0	89
	Average	9.4	13	.8	1	24.2		7.2	0	68.60

Records on the seasonal activities of the codling moth have been kept for several years in different sections of the state. The purpose of such records is to help time the codling moth sprays so as to get the best possible results from each application. These data are shown in Table 2.

Many questions are asked in regard to the actions of the codling moth after it emerges. Table 3 gives information on the length of time after the moths emerge before egg deposition starts and the length of the oviposition period. These records were taken during June and July from 474 moths.

During the past year an infestation of pistol casebearer was found in orchards near Hancock, Maryland. This is a serious pest to the fruit grower unless the proper means are taken for its control. No satisfactory means have been devised to control it with dormant sprays. Fair control has been obtained by applying a nicotine-oil spray immediately after the eggs begin to hatch. Two applications of a 1 per cent summer oil have been found to give fair control if applied from 7 to 10 days apart at the proper time.

Table 2.—*Showing Emergence and Egg Deposition of First Brood Moths and Emergence and Egg Deposition of Second Brood Moths*

First Brood Codling Moth Emergence

Number of Moths Emerging During each 3-day Period

		May										June										July					
		1	3	6	9	12	15	18	21	24	27	30	2	5	8	11	14	17	20	23	26	29	2	5	8	11	14	17
Hancock	1930	.....	.....	1	15	35	13	2	16	31	.....	1	8	10	2	2	11	9	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hancock	1931	.....	.....	.....	.....	.....	1	5	20	21	82	116	36	31	22	37	48	23	38	8	14	.....	.....	.....	.....	.....	.....	.....
College Pk.	1931	.....	.....	.....	.....	.....	1	2	21	20	30	43	49	72	106	38	82	18	6	14	.....	1	.....	.....	.....	.....	.....	.....
Easton	1931	.....	.....	.....	.....	.....	.....	2	30	18	61	48	19	42	90	51	33	31	29	49	18	32	8	2	3	1	.....	.....
Salisbury	1931	.....	.....	.....	.....	2	2	12	83	64	74	74	87	116	157	23	59	84	42	31	12	12	2	2	.....	.....	.....	.....
Berlin	1931	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	56	40	68	97	17	45	43	34	24	6	16	8	2	.....	.....	.....	.....
Hancock	1932	.....	.....	.....	3	1	0	20	118	154	272	27	56	29	39	34	55	40	32	34	20	22	15	10	2	.....	.....	.....
Easton	1932	.....	.....	.....	5	0	5	3	2	17	33	25	16	33	65	80	110	91	33	44	24	25	11	.....	.....	.....	.....	.....
Salisbury	1932	11	2	21	52	39	38	75	85	200	237	70	56	72	80	84	134	79	52	29	19	8	2	.....	.....	.....	.....	.....
Berlin	1932	.....	.....	.....	.....	.....	1	1	1	7	29	54	22	26	31	14	22	33	22	20	12	22	10	.....	.....	.....	.....	.....
Hancock	1933	.....	.....	.....	.....	.....	.....	1	16	152	358	213	75	116	193	239	57	98	62	87	69	23	10	5	1	.....	.....	.....
Salisbury	1933	5	7	4	4	7	16	37	157	109	102	97	22	60	78	95	53	45	32	27	7	4	1	.....	.....	.....	.....	.....
Berlin	1933	3	3	3	3	4	.....	1	13	8	101	245	96	219	293	134	102	36	36	49	35	14	6	3	5	.....	.....	.....
Hancock	1934	.....	.....	.....	.....	.....	3	2	187	76	24	122	54	54	41	50	40	78	53	37	26	2	7	5	21	10	8	4
Salisbury	1934	.....	2	.....	4	5	7	9	19	.....	15	52	54	46	34	40	24	13	6	2	2	1	.....	.....	.....	.....	.....	.....
Berlin	1934	.....	.....	.....	.....	.....	8	8	37	24	.....	28	17	15	34	17	8	5	5	5	.....	3	.....	.....	.....	.....	.....	.....
Hancock	1935	.....	.....	.....	.....	.....	.....	.....	.....	1	25	72	32	37	23	33	130	119	46	55	25	24	21	22	2	.....	.....	.....
Salisbury	1935	5	5	9	7	14	5	13	23	28	37	103	55	36	38	67	103	199	106	56	28	16	13	6	3	.....	.....	.....
Berlin	1935	.....	.....	.....	.....	.....	.....	.....	2	.....	3	28	48	65	39	30	80	29	33	4	.....	.....	.....	.....	.....	.....	.....	.....
Cordova	1935	.....	.....	.....	.....	.....	.....	1	5	17	14	31	19	6	6	6	13	9	12	5	.....	.....	.....	.....	.....	.....	.....	.....
Hancock	1936	.....	.....	.....	.....	4	2	12	28	35	36	26	39	44	53	33	21	32	41	7	12	4	4	6	2	.....	.....	.....
Hancock	1937	.....	.....	.....	.....	1	3	2	3	2	6	13	13	15	34	68	84	98	76	34	29	11	8	17	19	6	3	.....
Salisbury	1937	.....	.....	.....	.....	.....	1	4	3	26	17	18	49	64	48	43	50	27	30	20	6	1	1	2	1	.....	.....	.....
Hancock	1938	.....	.....	2	3	16	13	2	51	50	45	45	55	98	86	122	134	287	306	251	165	47	12	.....	4	.....	.....	.....
Hurlock	1938	3	8	12	6	2	.....	23	28	18	2	5	10	18	20	15	16	3	.....	.....	.....	.....	—	—	.....	.....	.....	.....

First Brood Codling Moth Egg Deposition

Number of Eggs Deposited During each 2-day Period

	May									June														July				
	15	17	19	21	23	25	27	29	31	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	2	4	6	8	10
Hancock 1931	....	....	....	40	0	0	95	215	300	61	293	442	142	172	130	112	119	54	45	23	63	88	127	50	11	....	....	....	....
Hancock 1933	....	....	....	5	9	60	574	642	545	234	859	1445	867	476	520	37	7	352	67	167	163	58	161	138	110	48	37	24	7
Hancock 1934	....	....	....	162	7	58	30	437	308	671	560	770	189	358	159	78	197	278	355	358	157	282	52	10	25	17	1	....	....
Hancock 1935	....	....	....	....	....	....	....	3	9	14	25	30	156	97	111	215	282	168	60	52	53	119	305	31	120	145	40	....	....
Hancock 1936	....	....	....	....	5	19	18	27	39	75	173	185	142	521	452	440	333	244	305	100	18	201	91	50	15	29	61	86	16
Hancock 1937	....	....	....	1	5	17	6	27	21	12	32	30	152	83	138	391	950	733	894	640	325	309	220	114	30	79	78	51	135

Second Brood Codling Moth Emergence

Number of Moths Emerging During each 2-day Period

	July																August												
	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	2	4	6	8	10	12	14	16	18	20	22	24	26
Hancock 1930	....	....	4	1	12	13	13	25	33	26	22	12	19	12	12	13	15	7	7	20	21	*	....	....	....	....	....	....	....
Hancock 1931	....	....	....	1	10	13	17	27	37	41	46	50	50	70	80	36	58	48	57	55	37	23	44	39	17	6	5	2	*
Hancock 1932	....	....	1	4	23	43	52	22	22	10	11	8	3	2	0	4	2	3	1	2	3	4	3	2	2	2	1	*	....
Salisbury 1933	....	....	....	....	....	5	10	14	14	8	7	10	9	7	10	2	6	3	1	3	4	4	3	3	2	0	10	15	3*
Hancock 1934	....	4	4	2	6	20	3	4	6	2	2	3	4	4	3	1	*	....	....	....	....	....	....	....	....	....	....	....	....
Hancock 1936	....	....	....	....	8	9	11	15	20	16	13	9	4	5	2	3	4	*	....	....	....	....	....	....	....	....	....	....	....

*Records discontinued.

Second Brood Codling Moth Egg Deposition

Number of Eggs Deposited During each 2-day Period, Hancock, Md. 1932.

July											August														September	
11	13	15	17	19	21	23	25	27	29	31	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	1	3
27	41	165	475	901	946	1000	990	1350	1638	1828	2249	1587	1367	1197	905	1280	1140	1619	1501	799	809	514	447	135	77	44	3

Table 3.—*Percentage of Eggs Deposited during each 24-hour Period after the Codling Moth Emerges*

24-hour periods																			
1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	21st
9.96%	19.59%	16.09%	12.03%	10.37%	8.77%	7.07%	3.77%	4.29%	2.68%	1.99%	1.23%	.68%	.58%	.42%	.27%	.21%	.13%	.07%	.03%	.....

REPORT

OF THE

THIRTY-SECOND ANNUAL MEETING

OF THE

Maryland Crop Improvement Association

Baltimore, Maryland
January 11-12, 1939

AND OF THE

STATE CORN AND GRAIN SHOW

PROGRAM

Wednesday, January 11th

10:00—Call to order by Fred C. Jones, President.

10:05—Appointment of Committees.

10:10—"NEW ROTATIONS", by Edwin Warfield, Jr., Woodbine, Md.
Discussion led by L. C. Burns, County Agent, Carroll County.

11:10—"GRASS AND LEGUME SILAGE", by Dr. T. E. Woodward, Sr. Dairy Husbandman, U. S. D. A.
Discussion led by H. M. Carroll, County Agent, Harford County.

12:10—Recess for lunch.

1:15—"HYBRID CORN", by Dr. Russell G. Rothgeb, Associate Geneticist, University of Maryland.

2:15—"SOME RESULTS OF RAPID SOIL TESTING IN MARYLAND", by Dr. R. P. Thomas, Professor of Soil Technology, University of Maryland.

2:45—Business meeting.

3:00—Adjourn.

(Judging and inspection of the Corn and Grain Show started promptly at 10:00 o'clock and continued all during the day).

NEW CROP ROTATIONS

EDWIN WARFIELD, JR.

The practice of rotating crops is a very ancient one. The advantages of doing so were well understood by the Romans, as is evidenced by the fact that their writers on agricultural subjects laid particular stress on the inclusion of legumes in rotations for the benefit to be derived by succeeding crops.

We will not have the time to trace the history of agricultural rotations from Roman days down to the present time, though I am sure a very interesting story could be written on that subject.

Coming down to our time and our State, let us first consider some of the basic factors which must be considered in planning rotations; let us then consider some of the new elements in the picture and then we might discuss a few specific rotations that may have greater possibilities than rotations which are now in general practice.

Many factors must be considered in the determination of a rotation. It involves a long-time plan and consideration must, of course, be given to such factors as feed requirements, seasonable distribution of labor, equipment required, the general farm layout, topography, soil type, fertility, soil erosion, distribution of income, disease and insect pest control and a number of related questions. It is not my purpose to lead you through the various steps in planning a rotation. It appears from the above that it is by no means a simple matter to work out a suitable rotation, which may be a very good reason why existing rotations tend to persist for a considerable time after better ones are available.

What are some of the new factors which make it timely to consider revising our existing practices with respect to rotations? Among these new factors can be listed the following:

A. New crops and new varieties of old crops.

   Under this heading I might specifically mention soybeans, sweet clover, alfalfa, the new Maryland no-barb barley and lespedeza. It seems to me that all of these crops merit a place in our cropping systems and yet there are many of our farmers who are not making use of them.

B. Greater available power and new and improved machinery.

   Under this heading we can list the all-purpose tractors, small and versatile combines, improved disks and field cultivators. With this equipment field operations can be greatly speeded, making it possible to double crop where it was not practicable to do it before. It also makes it possible to substitute disking operations for plowing in the preparation of land. A large variety of crops can now be quickly and economically harvested and the fields prepared for further cropping, with crop residue left on the ground where that is desirable.

C. Grass and legume ensilage.
The new technique in preserving a variety of grass and legume crops with molasses and chemicals makes it possible to eliminate corn from rotations where that step may be desirable from a standpoint of soil erosion or economy of labor.

D. Soil erosion control measures.
Under this heading it is obvious that contour farming and strip cropping involve a radical reorganization of the cropping system on farms where these and other similar measures are adopted. In this connection, I should like to raise the question as to whether more careful consideration should not be given to the possibilities of erosion control through changes in crop rotations before resorting to the extensive and expensive work involved in the installation of a terrace system on our Maryland farms.

E. Changes made necessary through participation in crop control programs.
The reduction in the acreage of certain crops which we have been accustomed to growing, notably wheat, in this section and the limitation on the growing of soil-depleting crops makes necessary on many farms the rearrangement of the cropping system.

F. Mechanization of operations to cut production costs.
The low prices generally prevailing for agricultural products is forcing a careful study of the possibilities of cutting the cost of production by this means.

G. Changes that may be made necessary by destructive insect pests such as the Japanese Beetle.

H. Possibilities of increasing crop production on an individual farm by double cropping, by which, of course I mean the production of two or more crops on a single field in one season.

Now, in the light of these new factors and of the general factors controlling all rotations, what are some of the apparent short-comings in our general cropping practices in Central Maryland in the matter of rotations? You are all familiar with the five-year rotation of corn, wheat, timothy and clover, and timothy pasture which, I believe, has been the most generally practiced rotation in Central Maryland. This has been a most useful rotation and is an excellent rotation as compared with farming practices in some other sections of the country. It seems to me to be, however, open to the following more or less serious criticisms:— To wit,—

A. Extent of sheet and gulley erosion in corn fields.

B. Infrequency of legume in the rotation, only once in five years.

C. Uncertainty of securing a stand of red clover.

D. Summer plowing for fallow ground wheat, involving unnecessary labor and loss of the use of the ground during a large part of the growing season.

E. Loss of time in summer plowing which might be spent in harvesting such crops as alfalfa and lespedeza.

F. Inferior pasture on second year timothy as compared with yields from lespedeza and sweet clover pasture.

Now, I have been somewhat critical of the old practices and we have considered some of the new factors entering into the problem. What specifically might we do by way of improvement. In suggesting the following few rotations it is not meant to be an all-inclusive list, as there are many other possible combinations and sequences which might be worked out advantageously. In fact, the number of new combinations possible and their flexibility is an interesting characteristic of these new rotations. Furthermore, there is no claim to originality, as some, if not all of them, are now in use by individual farmers and have been recommended by extension authorities.

A. Alfalfa Rotation.

1st year—Corn or soybeans fall seeded to barley and timothy.
2nd year—Barley with alfalfa seeded in the spring.
3rd year
4th year
5th year
6th year } Alfalfa

B. Pasture Rotation.

1st year—Corn or soybeans fall seeded to barley or wheat and timothy.
2nd year——Barley or wheat with sweet clover and lespedeza, sown on the grain in the spring.
3rd year—Timothy, sweet clover or lespedeza pasture. (One or two years as desired).

C. Small Grain Lespedeza Rotation.

1st year—Wheat, barley or rye.
2nd year—Wheat, barley or rye with lespedeza broadcast on grain in early spring; lespedeza stubble disked in fall and reseeded to small grain.

D. General Rotation.

1st year—Corn, fall seeded to barley.
2nd year—Barley stubble disked after harvest and seeded to soybeans, soybean stubble disked in fall and seeded to wheat and timothy.
3rd year—Wheat and lespedeza hay or pasture.
4th year—Timothy and lespedeza for hay or pasture.

In connection with these rotations it seems to me that we should consider the advisability of substituting barley followed by soybeans as a substitute for a great deal of our corn acreage, both of these crops to be harvested for grain. In growing these two crops in the same year it

can be readily accomplished. We have our carbohydrate and protein concentrates, with a total yield in pounds per acre in excess of what we could secure from the same acreage in corn, with reduced possibilities for soil erosion and less man hours involved in the production and harvesting of the combined crops.

The thoughts brought to you today have been purely suggestive and it seems to me that there is a wide field for research and study in this matter of crop rotations.

COMMENTS

L. C. BURNS

You have just listened, as I have, with much interest to a most fascinating discussion of crop rotations and their importance to Maryland farmers at the present moment. I know of no one so well equipped to discuss this important question as the preceding speaker, Mr. Edwin Warfield. Using his own farm as a laboratory he has worked out factors pertaining to farm management and crop rotations that should be of vital importance to all of us. Keeping in mind the Federal Program for Agricultural Adjustment and Erosion Control I am fully convinced that no problem confronting Maryland farmers is so important as that of proper crop rotations and their adaptation to the diversified types of farming practiced in this State. It would seem that the success or failure of farm operators will depend largely in the future on a sound cropping system, well adapted to the types of farming practiced on the many farms of this State. The present new or additional ideas on this subject in the limited time available would be difficult for me but we do have time for some questions and I am confident that you have many of them.

Questions Started

Some of those who participated—

Robert Engle,
Jesse Hull,
Charles Tracey,
John Roop,
Noah Arbaugh,
Walter Warehime.

GRASS AND LEGUME SILAGE

T. E. WOODWARD

Before we discuss methods of making silage from the grasses and legumes, let us consider whether the livestock farmers of Maryland should make these crops into silage rather than into hay. In general, crops can be made into hay cheaper than they can be made into silage. Less labor is required in making hay and the equipment is less expen-

sive. If a farmer can make these crops into good hay with certainty, there is little or no advantage in converting such crops into silage. Hay provides practically all the nutrients that are contained in silage; and the hay is ordinarily as palatable as silage, if we judge palatability by the quantity of dry matter that cows will eat.

Unfortunately, the weather in the spring, when the first cutting of alfalfa or clover is ready to be harvested, is likely to be unfavorable, with the result that the crops sometimes lie in the field for a week or more before they are dry enough to store in the barn. The loss of nutrients may be 25 to 50 per cent, or in some cases, the crop may be lost entirely. If the crop is put in the silo this loss is mostly avoided. It is not only with the first crops of alfalfa and clover that trouble is experienced. Oftentimes soybeans are practically ruined by unfavorable weather at the time of curing, especially if they are cut rather late in the fall. It appears that one of the principal changes in agricultural practices to be expected in the future is the increasing use of the silo for the preservation of the crops that are now usually made into hay.

Any hay crop can be made into silage successfully. Crops that are palatable and nutritious in the green state, or when they are made into hay, would likewise be palatable and nutritious when made into silage. On the other hand, one cannot expect much improvement in the nutritive value of a crop by putting it into a silo. Weeds and other unpalatable or inedible materials will be improved but little by putting them into the silo. In this connection we should note that putting crops in a silo destroys all of the seeds, whether they are weed seeds or farm grains. For several years we have buried seeds of weeds and farm grains in the silo with corn and the hay crops at Beltsville. When these seeds were removed and tested for viability, not a single one of them showed any signs of germination. On some farms, where weeds are a problem the silo may be of great service in helping to eradicate weeds.

When a green crop is put into the silo, the plant cells continue respiration. That is, they take in oxygen and give out carbon dioxide. In a few hours all of the oxygen is used up and its place is taken by carbon dioxide, with the result that the gasses in the silo are composed almost entirely of carbon dioxide and nitrogen. While this change is taking place the bacteria are starting to multiply. With increase in the numbers of bacteria there is an increase in the temperature of the silage. This increase in temperature may be much or little, depending upon the quantity of air in the silo. Silage which is loosely packed, or which is near the surface will develop higher temperatures than if the air had been more completely forced out and thereafter kept out. Ordinarily the temperature of the silage rarely exceeds 100°F., if proper methods have been used in making the silage and the silo has reasonably tight walls and doors.

As a result of the bacterial development, acids are formed from the carbohydrate material in the crop, especially the sugars and starches, the crude fiber being changed but little. Practically all the loss in

nutrients which takes place in the silo is with the sugars and starches although there is some breaking down of the proteins. It was formerly thought and is still thought by many persons, that the formation of acid is essential to the preservation of silage. This does not appear to be the case, however. For example, we have observed that if corn silage, which has a fairly high acidity, is put in a pile by the side of fresh cut corn it will spoil just as readily as the fresh cut corn. If acid were effective in preserving silage it would appear that the silage when exposed to air should keep longer without spoiling than similar material in which no acid had developed. This fact, along with the observations of experimental work in which crops with very little acid have seemingly been almost perfectly preserved, leads us to the conclusion that acids are more or less incidental to the making of silage and that they are not necessary to prevent either molding or rotting of the silage.

Acids are useful, however, in controlling the kind of fermentation that will take place. For example, if a legume crop, with a very high content of moisture is put into the silo without the addition of acid, molasses or any other material, the bacteria which cause bad odors and which are accompanied by a certain amount of protein decomposition will multiply rapidly. Under some conditions, therefore, acids are useful in making a silage with a good odor but they are not necessary to prevent molding or rotting.

The losses of nutrients in the silo should not in general exceed 10 per cent. A silo 14 ft. in diameter by 40 ft. high was filled with alfalfa at Beltsville in 1937 and an accurate record kept of the losses. The total loss of dry matter, including the spoilage on top and that due to fermentation, amounted to only 7½ per cent. This is very much less than usually occurs in the making of first cutting alfalfa or clover hay or in the making of soybean hay late in the fall.

There are several methods of making silage from the grasses and legumes. First, let us consider the addition of acids. As you no doubt know, there have been attempts made in the United States to introduce a method of making silage developed in Finland by Professor A. I. Virtanen. This method calls for the addition of considerable quantities of hydrochloric and sulphuric acids diluted with about five volumes of water. The addition of such acids has not met with much favor in the United States. First, because the acids will cost around $1.00 per ton of silage. Second, because they are inconvenient to apply. Third, because they are destructive to any sort of concrete or masonry work. But the biggest reason why the addition of acids is not proving popular is because they seriously impair the palatability of the silage. Furthermore, some form of lime or soda, usually ground limestone, must be sprinkled over the silage when it is fed, in order to neutralize the acids. Unless this is done the cow may suffer from an excess of acid in her body. One must admit, however, that the silage made with the addition of acids has a nice, clean, acid smell and that it is unlikely to affect the flavor or odor of the milk in any way. One must also admit that it usually lessens the loss of dry matter and protein in the silage.

This system of making silage is popular in the North European countries and it is rather difficult to reconcile the results obtained in those countries with the results obtained in this country. Methods of making silage in the North European countries are very different, however, from the methods employed in the United States. The method of making acid silage in these European countries is to dig a round pit in the ground 6 or 7 feet deep and about 15 feet in diameter, surround this pit with a wooden form some 6 or 7 feet high, fill the pit and the form with the unchopped grass, and then cover the top with soil about 1 foot deep. The solution of acids is added while the filling is progressing. In the course of a week or so the silage settles to about the surface of the ground, and the wooden form is removed. It seems likely that the fermentations that take place in this loosely packed material, in which a large amount of air is trapped, may be very different from those that take place in ordinary silos in this country. Our crops are almost invariably chopped before they are put into the silo, with the result that the amount of settling is more like 10 per cent of the height than 50 per cent of the height.

Recently the use of phosphoric acid in place of the hydrochloric and sulphuric acids has been advocated. The advantages claimed for phosphoric acid are that it will correct any possible deficiency of phosphorus in the ration, also that any phosphoric acid which is not used by the animal is returned to the soil in the manure as fertilizer. There is some justification for these claims, for it is well known that phosphoric acid, either as such or when combined with calcium or sodium, will correct phosphorus deficiency in the ration. The phosphoric acid, on the basis of phosphorus contained, will cost somewhat more than the phosphorus in the form of superphosphate. Liquid phosphoric acid at 5 cents a pound is equivalent to 16 per cent superphosphate at $25.00 a ton. So, while the phosphoric acid will be used as a fertilizer, it will be in a rather expensive form even if all of the manure is saved and applied to the soil.

Ordinarily less phosphoric acid is used than the other acids mentioned. The amount recommended is 16 pounds to the ton. This will cost in the neighborhood of 80 cents. There are still insufficient authenticated reports for us to judge accurately the influence of the phosphoric acid upon the palatability of the silage. It appears, however, that the phosphoric acid does not impair the palatability of the silage and that it does improve the odor of the high moisture silage made from legume crops.

The method which has been most used in the United States is one involving the addition of molasses. The theory underlying this practice is that the molasses will provide the easily fermentable sugar which will be converted into acids and thus help to preserve the silage. As indicated earlier in this talk, acids are not required for the prevention of molding or rotting of the silage but they do help to make a nice-

smelling silage under certain conditions. Investigations have shown that, contrary to expectations, a large part of the sugar in molasses is converted into compounds other than acids, with the result that the acidity is increased only slightly. This small increase in acidity has been found sufficient, however, to improve the odor of certain silages. The amounts usually recommended vary from 40 to 75 or 80 or even more pounds per ton. The cost of the molasses on the average, according to a survey made in the Northeastern States, is 1.2 cents per pound. This will make the molasses cost 50 cents to a dollar or so per ton of silage. Molasses improves the palatability of the silage just as it improves the palatability of any other feed with which it is mixed.

There are various methods of adding the molasses. One is to run the molasses on the crop as it travels along the feed table of the cutter. Another is to dilute the molasses with sufficient water to make it flow readily and run it into the blower of the cutter, or pump it to the top of the silage. It is very difficult to distribute the molasses evenly. Some silage cutters are now equipped with appliances that regulate the flow of molasses automatically. If one is running the molasses into the cutter, it is important that the flow of molasses stop when there is no more of the crop going through the cutter. If the molasses should accumulate in the blower of the cutter, clogging is likely to occur.

Another method which has recently been advocated in this country is to fill the silo slowly and allow each layer, two or three feet deep, to heat to a temperature of about 140° F. before the next layer is placed on top. This method has been used, we understand, rather extensively in New Zealand in the making of stack silage from the grass crops. The theory is that the high temperature will discourage the growth of bacteria that cause bad odors but will not kill those that develop good odors. Preliminary work on this method indicates that a good-smelling, palatable silage will be made but that the losses of dry matter and of carotene will be greater than if the material is not allowed to heat. It does not appear that this method will prove practicable in making silage in ordinary tower silos because 10 days or more would be required to fill a silo 30 feet high, whereas with our methods such a silo is often filled in one day. It is possible that this method may be practicable in the filling of trench silos where the surface area is much greater than in tower silos.

In our opinion the easiest and cheapest and best way of making silage from the grasses and legumes is to wilt the crop enough so that it will have not over 70 per cent of moisture. If a crop is harvested at about the stage of maturity in which it is usually cut for hay, it will ordinarily have about 75 per cent moisture. If the crop is more mature, and especially if the weather is drier, the crop at the time of harvesting may contain 65 per cent of moisture or even less. High moisture crops would need to be dried 2 to 4 hours on a good drying day or longer on a poor drying day. The crops that are harvested during a dry spell of weather, especially if they are rather mature, can be put in directly

after mowing without any wilting whatever. Our experience has been that partial drying increases the palatability and prevents the formation of substances in the silo that would give the silage a bad odor. While we have successfully put crops in a silo that were almost dry enough to go into the hay mow, we are not yet ready to advise putting crops into the silo with as little moisture as this. The drier the crop is the more difficult it is to exclude the air and the more necessary it is to have silos with tight walls and doors. We have also had a little trouble with mold when the moisture content of the material was about 40 per cent but have had no trouble with mold when the moisture was either more or less than that. The quantity of mold developed was not enough to prevent its use for feed. In fact, it was all fed and was eaten with relish. However, until we are certain that our methods of ensiling dried crops are perfect enough to assure against loss we would advocate drying only enough to bring the moisture content to 70 per cent, or a little below.

Wilting will prevent the leakage of juice from the silo. Such leakage wastes nutrients and in some cases is a decided nuisance on dairy farms. Wilting serves the same purposes as molasses in improving the odor and palatability, costs nothing, and leakage is avoided.

There are only certain crops that require any special attention when they are made into silage. Crops of oats, wheat, rye, Sudan grass and the grasses like timothy and red top, which are mature enough to make into hay, or mixtures of these crops with legumes, can be made into silage by using much the same methods as you would use in making corn silage. It is only the legumes or the young grasses that require special attention in order to avoid making a silage that is ill-smelling.

Grasses and legumes can be preserved successfully in any kind of silo so long as the air is excluded. It is mort important that the air be perfectly excluded from the silo in the making of silage from the hay crops than in making silage from corn or sorghum. The hay crops differ from corn in that the chopped material mats together in a way so that it can be built up with vertical sides, whereas corn silage would tend to slide off into the shape of a cone. Because of this difference in the character of the crop, if the air enters at the side of the silo and dries the silage enough to cause shrinkage, there will not be the same tendency for the silage to slide toward the wall and close the air spaces that there will be with corn silage. The result is that more air continues to enter, more shrinkage to occur, until the spoilage may involve a considerable area.

Because of this characteristic of the hay crops one will find that unless special precautions are taken at the top of the silo the spoilage around the sides at the top will extend down somewhat deeper than usually occurs with corn silage. We would suggest that some sort of building paper be put on top of the silage when the filling is nearly completed, being particularly careful to have the paper come well out to the sides of the silo. On top of this paper put one or two loads of as heavy material as can be found, in order to provide an air seal.

Grass and legume silage have been fed successfully on a great number of farms and at a number of experiment stations. There is no question as to the palatability of the silage if it is properly made. Most feeders are of the opinion that some dry hay should be fed along with the silage. In this connection it should be noted that these persons have been in the habit of making silage from the wet, green material which has usually been preserved with molasses. In our own experience we have substituted low moisture alfalfa silage for alfalfa hay in a four-months feeding experiment and have found that on the basis of dry matter the silage was fully equal to a grade of alfalfa hay, which under favorable conditions for curing, might have been made from the crop. There was nothing in this experiment to indicate that the ration of alfalfa silage would have been improved by adding some dry hay.

DISCUSSION

Leader: H. M. CARROLL

You have all heard a most interesting and enlightening presentation of this important subject which has, no doubt, aroused many questions in your minds. I shall not attempt any lengthy remarks myself but will follow what is generally expected of a discussion leader and advance several observations which may provoke contributions from the audience.

It is evident from the presentation by Dr. Woodward, and from my personal observations in Harford County, that there are many different opinions relative to the making of grass and legume silage, either with or without molasses. There are doubtless many dairymen present who have tried various methods and we would appreciate having them give their experiences.

Dr. Herbert Hoopes, Harford County, reported filling a metal silo partly with alfalfa, following later with sweet clover and completing with corn. Sixty pounds of molasses were used per ton with the alfalfa and sweet clover. Legumes were allowed to wilt slightly before ensiling. The silo manufacturer cautioned against putting in more tonnage than was recommended for corn. No difficulty was experienced, however, probably because of the fact that settling was allowed before the succeeding crop was added. There was practically no seepage from the silo. Cows relished the ensilage and were producing well on it.

Mr. Harry DeVoe, Manager Indian Spring Farm, Harford County, reported having had their second year's experience with molasses ensilage. Used alfalfa, alfalfa and weeds, and soybeans. Used 60 to 80 pounds of molasses per ton with crop being taken in without wilting. Experienced considerable difficulty in harvesting until special loader was secured to pick up crop from swath following mower. Windrow attachment for mower found advantageous. Great quantities of seepage leaked through joints of tile silo and some bulging of silo was noted. Small loss of silage occurred but cows relished the feed and produced well. Plans to practically entirely supplant legume silage for corn silage.

Mr. DeVoe expressed the opinion, however, that crops should be allowed to wilt well in the field before being taken up. Smaller amounts of molasses can be used but stronger and more reinforced silos are imperative.

Mr. J. Charles Rutledge, Harford County, experienced very satisfactory results from alfalfa-molasses silage, put up as usual in a concrete stave silo. Some little seepage noted. At present feeding 50 pounds silage per cow per day with 12% grain ration with satisfactory results.

Mr. Powell, Howard County. Now feeding molasses ensilage from alfalfa and soybeans with good results. Some seepage from silo noted. Some damaging of silo observed.

Mr. Joseph France, Harford County. Getting good results from alfalfa- and soybean-molasses silage. Was necessary to reinforce lower portion of concrete stave silo with extra hoops.

Mr. T. J. Heaps reported considerable difficulties arising from feeding alfalfa-molasses ensilage. Cows went off feed, serious diarrhea occurred, production fell off and has not been able to get cows to relish silage. Feeding 13% grain mixture. No one, including Dr. Woodward, could offer plausible explanation for trouble.

Many reported damage to silo from molasses ensilage. Dr. Woodward stated that similar difficulties had been experienced at Beltsville, due perhaps to excess moisture and acid in ensilage. Paraffin painted on inside of silo was a rather promising preventive at Beltsville.

Meeting turned back to Mr. Metzger.

HYBRID CORN

R. G. Rothgeb

Hybrid corn is a live topic of discussion among Maryland farmers. Most of them have become aware of this, the most recent step in corn improvement. Many have read glowing reports of hybrid performance in the Corn Belt states of the Middle West. Some of the more curious have been growing trial acreages on their own farms. Some of the latter have become quite enthusiastic, while others have been disappointed.

It is the purpose of this talk to clear up some of the questions about hybrid corn, and also to discuss some of the results being obtained by the experiment station. Inasmuch as it is often easier to understand the present by a review of the past, let us briefly outline some of the high points in previous corn improvement.

Seed selection in one form or another has been used to improve corn ever since man became interested in the crop. Ideals as to the proper type for which to select have differed, but the guiding principle remained the same. It is based on the fact that like tends to beget like. This, the most fundamental law of heredity, was long used in a practical way before any attempt was made to unravel its ramifications. Today geneticists continue to explore and label its complex mechanisms.

By fixing certain plant and ear characters in mind and selecting for them year after year corn breeders developed such famous varieties as Reid Yellow Dent and Johnson County White. It is true that the principle of hybridization was used in some instances. It was usually a case of crossing one variety with another in an effort to obtain a new combination of characters. Following the cross, selection was resumed in an effort to "fix" the characteristics desired. Persistence was usually rewarded with some degree of success.

An ordinary variety of corn, such as Reid Yellow Dent or Golden Queen, is by no means pure in hereditary make-up. It is simply a collection of plants which differ in breeding behavior. Two breeders may start with the same variety and by selection in different directions end up with two distinctly different strains of corn. In other words, a variety of corn is subject to a lot of change provided selection or natural conditions favor such change.

Because the breeder worked with impure material which he was never able to purify, varietal improvement was always slow and quite limited. Furthermore, the breeder selected from the female side only. As a rule pollination was not controlled. Nothing was known of the plants from which the pollen or male element came.

Modern hybrid breeding satisfactorily overcomes the problem of genetic impurity and indefinite paternity. In addition, it takes advantage of hybrid vigor, or the increased vigor which occurs in the first generation when certain parents are crossed.

Inbreeding

First, it is necessary to obtain pure stocks with which to work. This is done by an intense form of inbreeding of one or more established varieties, now commonly referred to as open pollinated varieties or sometimes merely as open pollinates. Inbreeding in animals often brings to light many weaknesses that had been covered up previously. So it is with corn. Here the breeder is desirous of having the weaknesses show up so that the plants which bear them may be discarded. He is searching for plants that breed true for good characters. Like the melting pot, inbreeding separates the good from the bad. It gives the breeder constant and substantial material with which to build his hybrids.

In practice, inbreeding is carried out by self-pollination, usually for at least five generations. As both sexes are borne on the same plant in the case of corn, self pollination is effected by artificial transfer of pollen (the male element) to the protected silks of the ear on the same plant. The resulting seed are planted to produce the first inbred generation. Plants of succeeding generations are treated in similar manner. During the process many abnormal plants appear and are discarded. Usually at the end of five generations some inbred lines remain which are sufficiently vigorous to be perpetuated. Though they may be of

poor appearance, they may be good as parents in crosses. Their true value as breeding stocks can only be determined through trial crosses, the next step in hybrid building.

Crossing

Once a collection of true breeding inbreds is obtained the next step is to cross one with another or with some test stock for the purpose of determining what inbreds form desirable crosses. A first generation cross is always more vigorous than its inbred parents. However, it still may not be good enough for commercial use. The practical breeder is only interested in combinations which have commercial possibilities. More or less by trial and error involving large numbers, he finds a few that are acceptable.

Commercial Hybrids

Crosses which are sold for use on the farm are often referred to as commercial hybrids. Occasionally they are first generation crosses between two inbred lines. More often they represent the first generation cross which results from combining two single crosses involving four inbred lines. The advantage of the double cross is that the seed sold for farm use was borne on vigorous single cross plants rather than on the weak inbred plants, which of necessity must be used in making single crosses.

In practice, the double cross between the single crosses (often called foundation hybrids) is effected by alternating in the same isolated field rows of the stock which is to be used as seed producer with rows of the other stock which is to furnish pollen for the cross. All tassels in the seed rows are thoroughly pulled out before they start shedding pollen. Thus, any seed formed on those plants will be crossed seed. A satisfactory job of detasseling necessitates going over the crossing block once every day rain or shine for at least fifteen days. Ordinarily, one full-time detasseler is required for 3 to 5 acres during the flowering period.

At maturity the ears on the detasseled plants are harvested from the standing stalk, immediately dried, then shelled, graded and bagged for shipment. This is the seed the farmer plants to produce a crop of corn for feed or use other than for seed. It is useless to save seed from such a crop because any superiority which it may have will last only one generation. After that it has no advantage whatever over ordinarily open-pollinated corn.

Results in Maryland

The Maryland Experiment Station has been running field trials with hybrids for several years. Few hybrids have been in the tests the whole time. None has been tested long enough to establish its final worth in the state. Most of those tested have come from mid-western states where hybrid corn has made its biggest advance. Many have not

been sufficiently well adapted to show to advantage when compared with the best long-season local varieties on the better corn land in the state. In 1938, however, a considerable number of hybrids showed consistent promise in experiment station tests. A full report of these trials has been given in "Miscellaneous Publication No. 671." Therefore, only the more noteworthy results need be recorded here.

In 1938, replicated trials were conducted at College Park, Spencerville, and Ridgely. Seven varieties and sixty-three hybrids were included at one or more of these locations. The season was favorable and yields were good at all three locations. The average yield per acre for the four best open pollinated varieties in each test were respectively 79.8, 78.5 and 73.3 bushels of shelled corn with 15 per cent moisture. The four varieties used for these averages were two strains of Reid Yellow Dent, one of Johnson County White, and one of Golden Queen. Despite the fact that all are well adapted and have long been popular in the productive corn growing sections of the state, their acreage yields were surpassed by 32 per cent of all hybrids tested at College Park, by 52 per cent at Spencerville, and by 84 per cent at Ridgely. Moreover, at these locations the top hybrid exceeded the top variety by 8.4, 15.2 and 9.8 bushels per acre respectively. Finally, there were five hybrids which outyielded the best variety in each of the three tests.

Such records speak well for crossed corn. They indicate that some of the existing combinations stand a good chance of being useful in Maryland. It must be remembered, however, that most of the more promising ones have only been tested one year. Another season may change the picture for some. None has been tested sufficiently to establish its true rating. It should be noted that a good many hybrids have not yielded as well as local varieties. The four poorest hybrids in the tests averaged 17 bushels per acre less than the four best varieties.

Not only do hybrids differ in productivity but also in maturity, plant height, ear type, disease resistance, wind resistance, etc. These differences make it necessary to be specific in ordering hybrid seed. The intelligent farmer will learn the value of insisting on getting seed of particular crosses which have built up satisfactory performance records in his own territory. He must get the right hybrid—not just hybrid corn.

In conclusion, it may be said that experimental results favor good hybrids, but all hybrids are not good and the same good hybrids are not suitable for all localities. As yet there are not enough records to determine what hybrids should be grown in the various parts of the state. However, some have shown consistent promise. On that basis they are being suggested to interested growers for trial acreages in 1939. A list of such crosses has been prepared for distribution.

Finally, beginners are advised to plant only a part of their acreage to hybrid corn the first year, and if possible to compare the results with local seed. Let each prospective grower be guided by field performance.

OBSERVATION OF THE RESULTS OF RAPID SOIL TESTING IN MARYLAND

R. P. THOMAS

Soil testing in Maryland had its greatest development within the past 10 years. During this time the advancements were so rapid that oftentimes it was impossible to compare the results of one year with another. However, during the past four years it was thought that the results might be compared even though there were changes in the method and procedure of making the tests. As a result, about 10,500 of the soil samples received for testing were recorded according to the results of the tests for calcium, magnesium, phosphorus and potassium. These were further summarized by counties and sections. A brief discussion of these data is given in this paper.

The number of soil samples included in this study represents only about 50% of the total number tested from various places in the state during this period. Oftentimes the sample when it was received was entered or recorded under the name of the bearer rather than the place from which the sample was taken. This made it practically impossible for the testing laboratory to designate the area which the soil sample represents. The samples were received from nearly everyone who uses soil although the majority of them came directly from farmers, gardeners, greenhouse men and resident owners.

As many may not be familiar with our method of testing these soil samples it will be briefly described. The samples were recorded and given a number when received. If necessary, they were dried, then screened, mixed and tested. A small amount of the soil was extracted with a weak acid solution which is supposed to remove the available plant food from the soil in about the same proportion as would be available to the plant during the growing season. Small portions of this extracted solution were tested for calcium, magnesium, potassium, iron, aluminum, nitrate nitrogen, ammonia nitrogen, manganese, phosphorus, chlorines and sulfates. The pH was determined on a separate sample by the glass electrode and the readily decomposable organic matter was estimated quantitatively. The texture of the soil was obtained by rubbing between the fingers. The results of the available material which was obtained from the extract were recorded by the following letter symbols—O, T, L, M, H and X. The O indicates that none of the element was available; T, a very small amount or trace; L, a small or low amount; M, a medium or fair amount; H, a high or large amount and X a very high or excessive amount.

Since space does not permit the recording of tests for each individual soil sample the state has been divided into five sections. All of the respective letter values for calcium, magnesium, phosphorus and potassium obtained in each section were summarized. Although the number of tests recorded here does not represent all received from each section, it should indicate the fertility trend of the soils in each section. Section

I comprises Allegany, Garrett and Washington counties; Section II consists of the Coastal Plain section of Cecil, and all of Kent, Queen Anne and Talbot counties; Section III represents Caroline, Dorchester, Somerset, and Worcester counties; Section IV is made up of Anne Arundel, Calvert, Prince George, Charles and St. Mary's counties. The remainder of the state is grouped into Section V. This is composed of the Piedmont section of Cecil, all of Harford, Baltimore, Carroll, Frederick, Howard and Montgomery counties. These summarized data are presented in tables 1 and 2.

Although the number from each section does not represent the actual number tested one can obtain something as to the demand for testing by observing the number of samples recorded from the different sections. Section I sent in the least number. There are probably several reasons why this section did not demand this service. Some of them may be the distances from College Park, less intensive farming, less actual need of testing, and smaller amounts of fertilizer used. The greatest number of tests came from Section V—the area in which the greatest percentage of land is devoted to general farming. Section IV was not far behind Section V. This is probably because this area includes the tobacco section of southern Maryland. The tobacco growers have been very extensive users of the rapid soil tests from the beginning. Sections II and III were about equal in their use of the rapid soil tests and used this service to only a limited extent.

The number of tests for the respective symbols is also expressed in percent of each section in tables 1 and 2. That is, for Section I, eleven samples showed no available calcium and this amounted to 2% of the number recorded in this section. These percentage values vary considerably according to the different elements and in the different sections in the state. A further summary of these percentage values was made in table 3 by combining respectively the values for O and T, L and M, and H and X. This gives three divisions for each section instead of six. Observations and experience have shown that an O or T value indicated a definite need or deficiency of that element. This has to be corrected by a lime or fertilizer application before a satisfactory crop can be grown. The L and M group, when combined, were called doubtful. This is because sometimes they may and may not respond to applications of lime and fertilizer. The H and X group were called sufficient because in most cases it is believed that when such amounts are found in the soil there is little need of using lime and fertilizers. Table 3 groups the result of rapid tests for each section in terms of percent according to the fertilizer and lime needs of a soil under the headings of deficient, doubtful and sufficient.

Calcium

The calcium results in table 3 show a large percentage or 73% of the soils tested in Section I contained ample calcium. This does not necessarily mean that the soils in this section of the state do not need

lime. It may be that the farmers in this area were more consistent users of lime, the need for lime was less, the smaller number of samples was not a good representation of this area or the samples received were from the better soils. Section V is the nearest to Section I in that it has a majority, or 56%, of the samples in the ample calcium class. This is in the more progressive farming section of the state. There are also limestone soils in this area which sometimes contain large amounts of available calcium. The monthly milk check of many in this section may have helped in obtaining the lime more regularly. There are still many soils in this area needing lime. Soils in Section II or the northern part of the Coastal Plain area in the state were the next highest in their amount of calcium although they were 29% in the ample class and 43% in the doubtful class. This indicates that the need of lime is high even in this section where there is considerable clover and hay grown. Section III or the central and southern portion of the Eastern Shore has the highest percentage or 59% in the deficient class. The soils in this section are more sandy than any other part of the state and are probably more extensively leached. The practice of keeping the soils quite acid for potatoes in the southern portion of this area may account for some of the deficient calcium tests. In this section the use of lime may be curtailed some to prevent any over-liming injury. Section IV, or the Southern Maryland, is also high in the percentage of soils which fall into the class of needing calcium. These soils have also been extensively leached and have come from a parent material which was quite low in calcium. Tobacco soils are also purposely kept low in available calcium in order to help control the root rot. Thus, it can be seen that some sections of the state may have greater needs of lime than other portions. The ever-increasing practice of applying lime in small quantities and more often may be partly responsible for some of the low calcium tests in some parts of the state.

Magnesium

Section I was also very high in its percentage of samples which contain sufficient magnesium. Many of the reasons suggested for the high calcium tests for this section may apply also to the magnesium, although the number with sufficient magnesium is less than for calcium. This indicates that many farmers in this section are probably using a high calcium lime when they should be using a lime carrying some magnesia. Section V is quite similar to calcium in its magnesium tests. This would indicate that many farmers in this section have been using a magnesium lime. There are also in this section many soils which have their origin from a rock quite high in magnesium. This may be partly responsible for the high magnesium tests. In Section II the need of magnesium is not as great as it is for calcium. This indicates that many of the farmers in this section probably have been using dolomitic lime. Section III has the highest percentage of tests deficient in magnesium. Even in this section the percentage of soils which were deficient in magnesium is much less than those which were deficient in calcium. Undoubtedly

TABLE 1. CALCIUM AND MAGNESIUM RESULTS OF THE RAPID SOIL TESTS FOR THE FIVE SECTIONS OF THE STATE

		Calcium						*Magnesium*					
		O	T	L	M	H	X	O	T	L	M	H	X
Section I	No. of Tests	11	39	58	77	140	350	14	36	99	141	135	260
	% of Tests	2	6	9	11	21	51	2	5	14	20	20	38
Section II	No. of Tests	52	366	415	241	183	260	39	128	359	407	286	298
	% of Tests	4	24	27	16	12	17	3	9	23	27	19	19
Section III	No. of Tests	269	434	219	86	56	141	132	310	346	186	108	107
	% of Tests	23	36	18	7	5	11	11	26	29	16	9	9
Section IV	No. of Tests	558	1274	674	363	219	303	244	713	978	536	408	512
	% of Tests	16	38	20	11	6	9	7	21	29	16	12	15
Section V	No. of Tests	79	370	525	660	760	1359	96	163	569	805	874	1171
	% of Tests	2	10	14	18	20	36	3	4	15	22	24	32

TABLE 2. PHOSPHORUS AND POTASSIUM RESULTS OF THE RAPID SOIL TESTS FOR THE FIVE SECTIONS OF THE STATE

		Phosphorus						*Potassium*					
		O	T	L	M	H	X	O	T	L	M	H	X
Section I	No. of Tests	316	207	111	38	8	5	184	79	139	92	81	110
	% of Tests	46	30	16	6	1	1	27	12	20	13	12	16
Section II	No. of Tests	842	374	196	78	15	9	881	332	134	79	42	49
	% of Tests	55	25	13	5	1	1	58	22	9	5	2	3
Section III	No. of Tests	640	342	136	72	9	7	555	342	193	73	24	19
	% of Tests	53	28	11	6	1	1	46	28	16	6	2	2
Section IV	No. of Tests	647	1011	506	169	37	21	546	848	806	659	388	146
	% of Tests	48	30	15	5	1	1	16	25	24	20	11	4
Section V	No. of Tests	2062	924	394	223	106	41	1530	933	470	307	238	269
	% of Tests	55	25	10	6	3	1	41	25	13	8	6	7

the farmers in this section have also been rather consistent in their use of magnesium lime. Southern Maryland or Section IV had about as many tests showing the need of magnesium as they had showing ample magnesium. The magnesium needs in this section were probably not as great as that of calcium because the tobacco grower has to have sufficient magnesia in the soil in order to produce a good quality of tobacco. The tests indicate that even these tobacco soils have not received enough magnesium lime. A study of the magnesium results in table 3 indicates that the soils in every section of the state may need magnesium. However, the central and southern Eastern Shore probably have the greatest need of magnesium. A soil test is probably the easiest way to determine if the lime should be a magnesium or high calcium material.

Phosphorus

The results of the phosphorus tests indicate that all sections of the state need this material. When 96-98% of the soil tests of the state show either a strong deficiency or probable deficiency one can easily realize why phosphorus is one of the important constituents of Maryland fertilizers. There is no doubt that if the soils of the state were properly limed and the organic matter increased or maintained the phosphorus tests would be higher. These materials would prevent the formation of insoluble phosphates in the soil and would hold the phosphorus in a more soluble form.

Potassium

The mountain, or Section I, showed the least need of potassium. Undoubtedly the fact that these soils came from igneous rock which are high in potassium and have been less intensively weathered is one of the important reasons for this. It should be pointed out that even in this section there were many soils which are definitely in need of potassium. Section II, or the northern Coastal Plain soils in the state, showed the greatest need of potassium. The fact that many of these soils grow crops which are heavy users of potassium may be a partial explanation of this. Undoubtedly the farmers in these sections have not been using as much potassium as they should have for most of their soils. The soils in Section III were also quite deficient in available potash. This was more or less to be expected because of the large amount of sandy soils in this region. The exchange capacity and absorbing capacity of the soil to hold potassium against leaching is low. Undoubtedly the available potassium is leached out of these soils about as rapidly as it is applied or formed in the soil. Although the soils in this section received large amounts of potash in fertilizers the tests indicated that more might be used profitably. Section IV showed a much lower percentage of soils in the deficient class than would normally occur if it were not for the tobacco growing in this section. As tobacco fertilizer is quite high in potash and a large amount per acre is applied many of the tobacco soils have built up a reserve of potassium. Even then, all

of the soils did not contain sufficient quantities of potassium. Approximately two-thirds of the soils in Section V showed a definite need for potassium. Since general farming occurs very largely in this section the tests indicated that the farmers as a whole were not using sufficient potash in their fertilizers. In this section there were many soils which are high in available potash. If this were not the case undoubtedly the need for potash in this section would be greater than it was.

Conclusions

The results of the quick tests on Maryland soils during the past four years indicated that a large number of soils in the state are badly in need of phosphorus, potassium, calcium and magnesium. The phosphorus poverty was the greatest of the four elements. Although many soils showed a potassium deficiency, it was not as great as that of phosphorus. Also, a large percentage of the soils in the state probably need lime. The lime need was the greatest in the Coastal Plain soils and least in the Mountain soil. The need of magnesium occurred in all sections of the state. However, the sandy Coastal Plain soils probably had the greatest need for this material.

TABLE 3. SUMMARY OF THE RESULTS OF THE QUICK TEST ACCORDING TO THE NEED OF CALCIUM, MAGNESIUM, PHOSPHORUS AND POTASSIUM BY SECTIONS.

		Results of tests by per cent for each section				
		Section 1	*Section 2*	*Section 3*	*Section 4*	*Section 5*
Calcium tests	Deficient	8	28	59	54	12
	Doubtful	20	43	25	31	32
	Sufficient	72	29	16	15	56
Magnesium tests	Deficient	7	12	37	28	7
	Doubtful	34	50	45	45	37
	Sufficient	58	38	18	27	56
Phosphorus tests	Deficient	76	80	81	78	80
	Doubtful	22	18	17	20	16
	Sufficient	2	2	2	2	4
Potassium tests	Deficient	39	80	74	41	66
	Doubtful	33	14	22	24	21
	Sufficient	28	5	4	15	13

REPORT OF THE SECRETARY-TREASURER FOR THE YEAR 1938

The Thirty-second Annual Meeting of the Maryland Crop Improvement Association was attended by approximately 75 farmers and others interested in the work. The timely, popular subjects discussed apparently made an appeal, as was evidenced by the interest manifested.

The State Corn and Grain Show was held in the Lord Baltimore Hotel on January 11th and 12th. The exhibit was larger this year as a result of additional premium money allotted by the Maryland State Fair Board. Two hundred and forty-seven exhibits were entered as compared to 198 the previous year.

District classes were provided this year to encourage new exhibitors without requiring them to compete with the established breeders. The Honorary Class and the Grand Champion Class attracted much attention and afforded the keenest competition in the Show.

Following are the number of entries in each class, the number of prizes given, and the names of the winners.

STATE CORN SHOW

Class 1—District I

a.	Reids Yellow Dent	14 entries	5 prizes offered
b.	Golden Queen	8 entries	5 prizes offered
c.	Lancaster County Sure Crop	4 entries	5 prizes offered
d.	Johnson County White	3 entries	5 prizes offered
e.	Other Yellow Dent	0 entries	5 prizes effered
f.	Other White Dent	0 entries	5 prizes offered

Class 2—District II

a.	Reids Yellow Dent	8 entries	5 prizes offered
b.	Golden Queen	5 entries	5 prizes offered
c.	Lancaster County Sure Crop	6 entries	5 prizes offered
d.	Johnson County White	6 entries	5 prizes offered
e.	Other Yellow Dent	8 entries	5 prizes offered
f.	Other White Dent	2 entries	5 prizes offered

Class 3—District III

a.	Yellow Dent	0 entries	5 prizes offered
b.	White Dent	0 entries	5 prizes offered

Class 4—District IV

a.	Reids Yellow Dent	1 entry	5 prizes offered
b.	Other Yellow Dent	3 entries	5 prizes offered
c.	White Dent	1 entry	5 prizes offered

Class 5—District V

a.	Reids Yellow Dent	0 entries	5 prizes offered
b.	Other Yellow Dent	8 entries	5 prizes offered
c.	White Dent	2 entries	5 prizes offered

Class 6—District VI

a. Yellow Dent ..... 9 entries ..... 5 prizes offered
b. White Dent ..... 1 entry ..... 5 prizes offered

Class 7—Honorary

a. Reid's Yellow Dent ..... 9 entries ..... 7 prizes effered
b. Golden Queen ..... 10 entries ..... 7 prizes offered
c. Johnson County White ..... 5 entries ..... 7 prizes offered

Class 8—White Cap

5 entries ..... 5 prizes offered

Class 9—Single Ear Class

39 entries ..... 5 prizes offered

Class 10—Maryland 30 Ear Seed Growers Display

15 entries ..... 7 prizes offered

Class 11—Grand Champion

Class 12—4-H Club Members Only

a. Yellow Dent ..... 11 entries ..... 5 prizes offered
b. White Dent ..... 7 entries ..... 5 prizes offered

Class 13—Vocational Agriculture Students Only

a. Yellow Dent ..... 12 entries ..... 5 prizes offered
b. White Dent ..... 2 entries ..... 5 prizes offered

Class 14—Wheat

11 entries ..... 5 prizes offered

Class 15—Barley

a. Marnobarb ..... 3 entries ..... 5 prizes offered
b. Tennessee Winter ..... 15 entries ..... 5 prizes offered

Class 16—Rye

2 entries ..... 5 prizes offered

Class 17—Soybeans

0 entries ..... 5 prizes offered

Class 18—Maryland Grown Red Clover Seed

12 entries ..... 5 prizes offered

M. C. Zimmerman of Frederick, Maryland, was named winner of the grand champion award for the best ten-ear exhibit of corn this year in the annual Maryland Corn Show. The award was $20.00.

Others who were awarded places in the contest were as follows:

Class One—Reids Yellow Dent—First, James R. Galbreath, Street; second, Granville Arbaugh, Westminster; third, Mildred Arbaugh, Westminster; fourth, Mrs. Granville Arbaugh, Westminster; fifth, Charles R. Albright, Reisterstown.

Class One—Golden Queen—First, Charlotte L. Kroh, Westminster; second, Katherine Arbaugh, Westminster; third, Melvin Kroh, Westminster; fourth, F. S. Grove, Westminster; fifth, Mildred Arbaugh, Westminster.

Class One—Lancaster County Sure Crop—First, Mrs. Walter Warehime, Westminster; second, Ida Warehime, Westminster; third, Eleanor Galt, Westminster; fourth, Walter Warehime, Westminster.

Class One—Johnson County White—First, John W. Milburn, Elkton; second, Charles R. Albright, Reisterstown; third, Earshel B. Helton, Darlington.

Class Two—Reids Yellow Dent—First, Howard Burtner, Keedysville; second, O. W. Burtner, Sharpsburg; third, R. W. Burtner, Sharpsburg; fourth, G. Edgar Hawker, Frederick; fifth, L. C. Stup, Frederick.

Class Two—Golden Queen—First, Richard R. Holter, Jefferson; second, Cecil K. Holter, Jr., Jefferson; third, G. Edgar Hawker, Frederick; fourth, Howard Burtner, Keedysville; fifth, Maynard Hawker, Frederick.

Class Two—Lancaster County Sure Crop—First, Clark Crawford, Keedysville; second, Howard Burtner, Keedysville; third, Edwin Burtner, Keedysville; fourth, R. W. Burtner, Sharpsburg; fifth, O. W. Burtner, Sharpsburg.

Class Two—Johnson County White—First, Jacob Burtner, Boonsboro; second, O. W. Burtner, Sharpsburg; third, R. W. Burtner, Sharpsburg; fourth, Leroy Burtner, Sharpsburg; fifth, Howard Stup, Frederick.

Class Two—Other Yellow Dent—First, John A. Holter, Jefferson; second, Roger Burtner, Keedysville; third, Leroy Burtner, Sharpsburg; fourth, Cecil K. Holter, Jr., Jefferson; fifth, O. W. Burtner, Sharpsburg.

Class Two—Other White Dent—First, R. W. Burtner, Sharpsburg; second, O. W. Burtner, Sharpsburg.

Class Four—Reids Yellow Dent—First, C. Orville Drury, Dunkirk.

Class Four—Other Yellow Dent—First, Clifton Abell, Bowie; second, George M. McKay, Jr., Mitchellville; third, Ellen Wilson, Brandywine.

Class Four—White Dent—First, E. S. Sherbert, Huntingtown.

Class Five—Other Yellow Dent—First, John Ware, Sudlersville; second, Walter Hollingsworth, Church Hill; third, Robert Kimbles, Church Hill; fourth, Marion Benton, Sudlersville; fifth, Wendell Lednum, Cordova.

Class Five—White Dent—First, Marion Coleman, Church Hill; second, Stanley Lankford, Cordova.

Class Six—Yellow Dent—First, Dorsey Harding, Cambridge; second, Matt Harding, Cambridge; third, Thomas S. Hearne, Salisbury; fourth, A. Lee Pollitt, Salisbury; fifth, I. C. Jones, Tyaskin.

Class Six—White Dent—First, C. C. Phillips, Salisbury.

Class Seven—(Honorary) Reids Yellow Dent—First, T. Wilson Galbreath, Street; second, Jacob Burtner, Boonsboro; third, M. C. Zimmerman, Frederick; fourth, C. D. Davis, Street; fifth, D. E. Zimmerman, Frederick; sixth, Maynard Hawker, Middletown; seventh, B. F. Zimmerman, Frederick.

Class Seven—(Honorary) Golden Queen—First, Iva Arbaugh, Westminster; second, John E. Grove, Westminster; third, Granville Arbaugh, Westminster; fourth, Walter Warehime, Westminster; fifth, Eleanor Galt, Westminster; sixth, Noah Arbaugh, Westminster; seventh, Mrs. Granville Arbaugh, Westminster.

Class Seven—(Honorary) Johnson County White—First, M. C. Zimmerman, Frederick; second, Tobias E. Zimmerman, Frederick; third, D. E. Zimmerman, Frederick; fourth, B. F. Zimmerman, Frederick; fiifth, Fred C. Jones, Darlington.

Class Eight—White Cap—First, Jacob Burtner, Boonsboro; second, Mellor K. Ward, Jarrettsville; third, Howard Burtner, Keedysville; fourth, Waldon Burtner, Boonsboro; fifth, Edwin Burtner, Keedysville.

Class Nine—Single Ear—First, Tobias E. Zimmerman, Frederick; second, B. F. Zimmerman, Frederick; third, Earshel B. Helton, Darlington; fourth, Richard R. Holter, Jefferson; fifth, Howard Stup, Frederick.

Class Ten—Maryland Seed Growers Display—First, Tobias Zimmerman, Frederick; second, Mrs. Granville Arbaugh, Westminster; third, T. Wilson Galbreath, Street; fourth, M. C. Zimmerman, Frederick; fifth, Eleanor Galt, Westminster; sixth, Chela Farms, Phoenix; seventh, Granville Arbaugh, Westminster.

Class Eleven—Grand Champion—M. C. Zimmerman, Frederick.

Class Twelve—4-H Club, Yellow Dent—First, Edwin Burtner, Keedysville; second, Roger Burtner, Keedysville; third, Cecil K. Holter, Jr., Jefferson; fourth, Clark Crawford, Keedysville; fifth, Eleanor Morelock, Westminster.

Class Twelve—4-H Club, White Dent—First, Cecil K. Holter, Jr., Jefferson; second, Clark Crawford, Keedysville; third, Edwin Burtner, Keedysville; fourth, Waldon Burtner, Boonsboro; fifth, Roger Burtner, Keedysville.

Class Thirteen—Vocational Agriculture, Yellow Dent—First, Robert Galbreath, Street; second, Robert Curtis, Sparks; third, Cecil K. Holter, Jr., Jefferson; fourth, Robert Wagner, Hampstead; fifth, T. Malcom Heaps, Street.

Class Thirteen—Vocational Agriculture, White Dent—First, Cecil K. Holter, Jr., Jefferson; second, H. W. Heaps, Pylesville.

Class Fourteen—Wheat—First, George M. Tracy, Westminster; second, Leroy Burtner, Sharpsburg; third, H. Paul Morelock, Westminster; fourth, O. W. Burtner, Sharpsburg; fifth, Charles Albright, Reisterstown.

Class Fifteen—Barley, Marnobarb—First, Noah Arbaugh, Westminster; second, James Galbreath, Street; third, Granville Arbaugh, Westminster.

Class Fifteen—Barley, Tennessee Winter—First, Walter Warehime, Westminster; second, H. Paul Morelock, Westminster; third, Tobias E. Zimmerman, Frederick; fourth, Howard Stup, Frederick; fifth, James Galbreath, Street.

Class Sixteen—Rye—First, William J. Hines, Jr., Brinklow; second, Jacob Burtner, Boonsboro.

Class Eighteen — Maryland Grown Red Clover Seed — First, Leroy Burtner, Sharpsburg; second, George M. Tracy, Westminster; third, Walter Warehime, Westminster; fourth, O. W. Burtner, Sharpsburg; fifth, H. L. Tracy, Westminster.

The exhibits were judged by G. L. Schuster of the University of Delaware, Geary Eppley and Albert Woods of the University of Maryland.

At the business session on Wednesday, January 11th, the following officers were elected for the ensuing year:

President—Edwin Warfield, Jr., Woodbine, Md.
Vice-President—Leonard A. Renshaw, Centreville, Md.
Secretary-Treasurer—John W. Magruder, College Park, Md.
Farm Bureau Representative—Lawrence E. Ensor, Sparks, Md.

A motion was made and carried that the Secretary of the Maryland Crop Improvement Association be instructed to write each exhibitor in the 1939 Show asking them to vote upon the question, "Do you favor limiting exhibits next year to one entry from a farm?" The results of this questionnaire will serve as a means of guiding the officers of the Association in determining the policy to follow in 1940.

The following resolution was offered and passed:

RESOLUTION

Passed by the MARYLAND CROP IMPROVEMENT ASSOCIATION at the regular meeting held on January 11th, 1939.

It is indeed with saddened hearts that we here announce the death of the Secretary-Treasurer of our Association which occurred on the 22nd day of January, 1938.

Professor F. W. Oldenburg, or Brother Oldie, as we affectionately called him, was actively connected with our organization for many years and was well known to farmers and friends of agriculture in all parts of Maryland, as well as in other states.

Always pleasant and agreeable and with a splendid personality and willingness to give freely of his time and thought and judgment, he was regarded as one of the very few outstanding judges of grain and his interest and knowledge was sought by farmers from all sections and his efforts to educate and instruct grain producers how to improve the quality and method of growing of grain, have gone a long way toward making our farm products among the very best that are produced in the eastern part of the United States.

We shall always feel grateful for his kind and efficient leadership, especially in connection with the growing of "quality" grain in Maryland and we are very sure that his contribution to Agriculture has helped and benefitted all farmers, and his influence will be felt among us for many, many years.

To his bereaved family we offer our sincere sympathy and we wish to here record our deep sense of loss because of his death.

We ask that a copy of this resolution be sent to his family and one copy preserved in the records of our Association.

TREASURER'S REPORT

Maryland Crop Improvement Association
January 1, 1938 to December 31, 1938

Balance in Bank—January 1, 1938		$ 59.86
Receipts		
Appropriation from Maryland State Fair Association	$475.00	
Appropriation from Maryland State Fair Association for tobacco premiums	100.00	
Dues paid by members (1938)	6.00	
Dues taken out of awards	58.00	
Total Receipts		639.00
Total		$698.86
Expenditures		
Maryland Farm Bureau Dues	$ 20.00	
Awards, 1938 Corn and Grain Show (Less amount reserved for dues)	336.00	
Awards, 1938 Tobacco Exhibit	100.00	
Ribbons, 1938 Corn and Grain Show	21.98	
Labor in connection with 1938 Show	9.20	
Postage, circulars and letters, (1938 and 1939 Shows)	11.40	
Printing, 1939 Premium List	22.00	
Dues taken out of awards	58.00	
Service Charge to Prince George's Bank	1.00	
Total Expenditures		$579.58
Cash in Bank (Dec. 31, 1938)		$119.28
Total		$698.86
Brought Forward—		
Balance in Bank—January 1, 1939		$119.28

Baltimore, Maryland, January, 1939.

We, the undersigned, have examined the books of the Treasurer of the Maryland Crop Improvement Association and have found them to be correct.

Auditing Committee,

WARREN G. MYERS
JOHN COTTON.

REPORT

of the

30th Annual Meeting

of the

Maryland State Beekeepers' Association

Lord Baltimore Hotel, Baltimore, Maryland
January 11, 1939

The 30th Annual Meeting of the Maryland State Beekeepers Association was held in the Lord Baltimore Hotel, Baltimore, January 11, 1939. This meeting was conducted in two sessions, one in the afternoon and one in the evening, so as to avoid crowding and rushing of the program. This arrangement proved most satisfactory.

The afternoon session was called to order at 2 P. M. by President Harold L. Kelly of Forest Glen, with brief remarks of welcome to beekeepers from distant counties and to distinguished out-of-state apiculturists.

The Secretary-Treasurer's report was read and approved.

Mr. Kelly then discussed the activities of the Association during 1938. He pointed out the seriousness of the bee disease situation in Maryland and reviewed the work done by the Association through its County Foulbrood Committee in contacting Dr. H. C. Byrd, President of the University of Maryland, and numerous state legislators in regard to securing funds for a state apiary inspection service. President Kelly praised the Bee Disease Educational Campaign conducted by the University of Maryland Extension Service featured by the Bee Clinics and the publicity directed especially at the beekeepers by the same agency, and expressed the opinion that after 23 years he believed that Maryland had at last marshalled enough strength to demand and have established an Inspection Service.

Mr. Kelly called attention to the formation of new chapters of the Association at Cumberland, Easton, Caroline, Salisbury and College Park and expressed the hope that active groups would be organized at Westminster and Bel Air during 1939.

At this point Mr. Kelly called on George J. Abrams, specialist in Apiculture, University of Maryland, Extension Service, for a review of the year's extension activities in Bee Culture. Mr. Abrams described the Beginners' Schools in Bee Culture conducted at Easton, Denton and College Park and indicated that County Schools would be included as a yearly portion of the extension work.

Mr. Abrams also described the Bee Clinics and urged no abatement in the drive for an adequate Inspection Service, pointing out that over half of Maryland's Counties are known to harbour disease and that in

at least seven counties bee culture at the present time is a precarious undertaking because of the danger of infection.

Mr. Abrams explained the Maryland Fair Program which aims at establishing bee products exhibitions at no less than 9 County Fairs, the Timonium Fair, and the Farm Products Show; offering the same standard premium list and each providing ample prize money.

Mr. Abrams concluded his talk with a brief discussion of the inadequacies of the Maryland Bee Law, and asked that a committee be appointed to contact the State Law Department and determine how the Association should go about having all legal loop-holes plugged. President Kelly appointed a committee of three headed by Dr. Thomas H. Litz, Baltimore, to contract the proper authorities.

At this point, Mr. A. D. Hiett, Lynchburg, Virginia, was called upon and responded with a fine talk in which he praised the work being done by the Maryland Association and urged greater cooperation between neighboring states.

The afternoon session adjourned at 4:30 P. M., at which time the group inspected the Second Annual Honey Sweepstakes Exhibition that had been set up in the lobby in connection with the Winter Farm Products Show. This Honey Sweepstakes was entered by 17 beekeepers from all parts of the state, thereby effecting state-wide competition.

The individual exhibits set up in the lobby occupied one whole side of the mezzanine floor and presented an admirable exhibition of bee products.

At 6 P. M. a Beekeeper's Dinner, at Giland's Cafe across the street from the Hotel, was attended by about 60 beekeepers. By common consent no talks were presented at this time.

At 8 P. M. the group re-convened in the hotel for the evening session. H. L. Kelly reviewed the proceedings of the afternoon session for beekeepers who were unable to attend and then appointed J. I. Hambleton and W. J. Nolan of the U. S. Bee Culture Laboratory, to act as a committee to decide winners of the "Box Hive" letter contest. He then called upon Roger Burdette, Agricultural Economist, University of Maryland, who presented the findings of his economic study of the Maryland Beekeeping Industry. Considerable discussion followed this splendid talk.

Prominent visitors at this point were introduced including James I. Hambleton, Director; W. J. Nolan, Apiculturist; Dr. C. E. Burnside, Apiculturist; all of the U. S. Bee Culture Laboratory.

At this point, Dr. R. E. Snodgrass, Entomologist and world's leading authority on the anatomy and physiology of the honey bee, gave an interesting illustrated talk on bee anatomy and explained in detail the morphological evolution of the bee to its present static form. Great interest was shown in the description of how the bee accomplished stinging, nectar sucking and flying.

Dr. T. B. Symons, Director, University of Maryland Extension Service, spoke briefly and expressed the hope that Maryland beekeepers would prevail in their fight for funds for an inspection service.

PRIZE WINNERS

2ND ANNUAL "HONEY SWEEPSTAKES"

January 11, 1939. Lord Baltimore Hotel, Baltimore

Class	1st	2nd	3rd	4th	5th
Best Display	$50 Byron Darby Hyattstown	$40 L. B. Shearman Glenarm	$30 F. D. Covell Frederick	$20 N. W. James Baldwin	$10 E. A. Andrews Govans
24 pounds light extracted	$20 Byron Darby Hyattstown	$16 L. B. Shearman Glenarm	$12 Carl Nelker Baltimore	$8 F. D. Covell Frederick	$4 N. W. James Baldwin
24 pounds dark extracted	$20 N. W. James Baldwin	$16 Byron Darby Hyattstown	$12 L. B. Shearman, Jr. Glenarm	$8 L. B. Shearman Glenarm	$4 Carl Nelker Baltimore
6 sections light comb	$20 Spencer Biddle Chestertown	$16 C. M. Hicks Hagerstown	$12 S. W. Beall Clarksburg	$8 Byron Darby Hyattstown	$4 L. J. Hiltgartner Phoenix
6 sections dark comb	$20 N. W. James Baldwin	$16 C. W. Marshall Baldwin	$12 Howard Coale Bel Air	$8 M. P. Ilgenfritz Castleton	$4 Byron Darby Hyattstown
Single section	$5 N. W. James Baldwin	$4 C. M. Hicks Hagerstown	$3 F. D. Covell Frederick	$2 Byron Darby Hyattstown	$1 E. A. Andrews Govans
Beeswax	$10 N. W. James Baldwin	$8 E. A. Andrews Govans	$6 L. B. Shearman Glenarm	$4 Byron Darby Hyattstown	$2 Mrs. J. E. Byers Hagerstown

$5 Honorable Mention (Class No. 1) L. J. Hiltgartner, Phoenix.

Winners of the "Box Hive" letter contest were then announced. Millard Rice of Jefferson won first place and a check for $10.00. Second place went to C. Wayne Marshall of Baldwin, and third place to Leonard C. Needles, Chestertown.

Announcement of winners in the Honey Sweepstakes was made, the judges being Dr. Ernest N. Cory, College Park; and Dr. C. E. Burnside.

It was voted to hold the 31st Annual Meeting at some other point in the state, following a policy of alternating the Annual Meetings between Baltimore City and the Counties.

Election of officers was then held with the following results:

President—H. L. Kelly, Forest Glen,
Vice-President—E. A. Andrews, Jr., Govans,
Secretary-Treasurer—George J. Abrams, College Park,
Director to Farm Bureau—Dr. E. N. Cory, College Park,
Delegate to Farm Bureau—Dr. J. R. Abercrombie, Baltimore.

The meeting adjourned at 11 P. M.

ANNUAL ADDRESS OF HAROLD L. KELLY

President, Maryland State Beekeepers Association
Forest Glen, Maryland

Ladies and Gentlemen and Fellow Beekeepers:

Once again we assemble for our annual meeting, and I am pleased with the excellent attendance. It is indicative of increased interest in the association and the beekeeping activities in the state, as was the attendance of the many meetings held since our last annual meeting. Since that time we have held twenty-nine meetings in various places in the state. Three were summer field meetings. The others were night meetings mainly for the purpose of acquainting the beekeepers with the foulbrood situation and to give momentum to our program to control this scourge.

The summer field meetings were held as follows: Eastern Shore meeting at Lawrence Adkins' near Parsonsburg, attendance—66. This was in June. In July we met at Sam Crocker's here in Baltimore. Attendance—120. For the September meeting, we traveled west and met at John Lindner's in Cumberland. An all-day cold rain kept the attendance down to 38.

The other meetings were as follows:

January—Towson and College Park.
February—Easton, Salisbury, Denton, Frederick, Hagerstown and Bel Air.
March—Rockville, College Park, two meetings at Westminster, one at Cumberland.
April—Bel Air and Towson.
September 24—The foulbrood committee of twenty-two beekeepers met with Dr. H. C. Byrd, President of the University of Maryland, and a foulbrood inspection program and our request for money in the

state budget to provide inspection service was presented. This committee was made up of beekeepers from the extreme western counties to the lower eastern shore counties.

October—Bee clinics were held to acquaint beekeepers with the disease, foulbrood, so they could detect the disease if it appeared in their apiaries. These clinics are invaluable at this time, when we have no inspectors to do the work. These clinics were held at Easton, Denton, Salisbury, Frederick, Hagerstown, Westminster, Towson and Bel Air.

During the year Mr. Abrams conducted seventeen beginners schools in connection with his extension service work. The outstanding features of these meetings were more foulbrood clinics where diseased combs of brood were exhibited showing various stages of the disease.

The foulbrood program is progressing, but we are not yet out of the woods and I fear that a hard fight for our appropriation is ahead. As previously stated, the committee met with Dr. Byrd last September and presented our wants. It did not take Dr. Byrd long to realize the necessity for this appropriation, and he agreed to include an adequate amount in a budget. Our estimate was for $2,600 for inspectors and $600 for cost of supervision, total of $3,200. Dr. Byrd questioned the $600 but in a letter assured me that he would include at least $2,600. I am now informed that $400 of the $600 requested for supervision has since been included, making our item total $3,000.

Due to the fact that Governor O'Conor has pledged a drastic cut in the State Budget our item has not been included in the regular Horticultural budget, but in a supplemental budget along with demands from other groups for increased appropriations. Mr. O'Conor's attitude towards these items does not appear encouraging so I see a hard fight ahead if we are to succeed. A few days ago I wrote this letter to Governor O'Conor:

Forest Glen, Md.
January 9, 1939

Hon. Herbert R. O'Conor,
Governor-elect,
Baltimore Trust Building,
Baltimore, Maryland.

My Dear Governor:

The Beekeepers of Maryland are interested in the State Horticultural Budget which we understand is to be severely cut before going to the Legislature. As citizens and taxpayers, we appreciate the necessity of wise spending of state funds, but do not believe that the State Department of Agriculture should be handicapped in its efforts to control pests and disease which threaten the food production of the State or that the educational work of the Extension Service should be curtailed.

I am writing with particular reference to an item of $6,000 ($3,000 per annum) which has been submitted by Dr. H. C. Byrd in a supplemental

budget to provide for inspection of apiaries in the State. There is a very destructive disease of bees known as Foulbrood, which is now rampant over the state and unless something is done to control the situation it will only be a matter of time before the bee industry will be wiped out.

The General Assembly of 1916 passed a honeybee inspection law. This law was passed with hopes of preventing this serious disease from getting a foothold within the state as there was at that time evidence of its presence. As no money was ever appropriated to provide inspection service to keep the disease under control, it has now gained a foothold and unless something is done very soon our industry is threatened with extinction. Already many beekeepers have suffered heavy losses as the only satisfactory remedy is to burn the bees and equipment of infected colonies.

A recent scouting of apiaries in the vicinity of Baltimore and Washington metropolitan area showed an infection of 30% of apiaries inspected and 10% of colonies of bees.

Other states have recognized the value of the honeybee as a source of food as well as its unestimated value to the orchardist in pollenization work and have made provisions for inspection of apiaries and control of disease.

In this state there are 32,000 colonies of bees. The 1930 census shows bees on 2,775 farms, which does not include many commercial honey producers, as they usually do not live on farms.

I trust that our request will not be cast out because it is a new item in the budget, but that careful consideration will be given it on its merit. We have been very conservative in estimating the amount and believe it to be the least that will give satisfactory results in bringing the bee disease situation under control.

In the event that favorable consideration is not given to this item, I respectfully request that we be given an opportunity to appear before the Budget Committee before final disposition is made of this request.

Very truly yours,

HAROLD L. KELLY, President.

HLK:mk

There is still work for the Foulbrood Committee if we get the opportunity to go before the Budget Committee, and still more if our item is not included when the budget reaches the Legislature. In that case, we will have an opportunity to go to the Legislature and insist that the item be put back. Then, I want not only the Foulbrood Committee, but all beekeepers to stand by for the call. It may be necessary for us to swarm down upon Annapolis to win our fight. This matter is too important to us to give up and probably will require the concerted effort of all to win.

Several contact groups or foulbrood sub-committees were formed in various parts of the State for the purpose of contacting their representatives in the Legislature at their homes as soon as we had definite knowledge that our item was in the budget. These contacts were to inform

the members of the Legislature of our desire and to present them with supporting facts. However, these groups were not called into action as our item did not become a part of the college budget in time to get the contemplated actions before members of the Legislature had left for Annapolis. These groups can still be of assistance in the event that we go to Annapolis to press our demands.

There were three new chapters to the Beekeepers Association formed the past year; two on the Eastern Shore in Talbot and Wicomico counties and at Cumberland a "Mountain Counties Chapter" comprising Garrett and Allegany Counties.

I believe that Maryland beekeeping is going forward and has brighter prospects than ever before. We are better organized and greater interest in the Association is being shown by the beekeepers themselves. What we lack in the production of large crops, such as are produced in the west, is offset by the fact that we are near large centers of population and can get retail prices or better wholesale prices for our crops.

ANNUAL REPORT OF EXTENSION ACTIVITIES IN BEE CULTURE FOR 1938

By GEORGE J. ABRAMS
Specialist in Apiculture
University of Maryland Extension Service

EDUCATIONAL WORK

Bee Culture Schools

Since success in bee culture is predicated upon a thorough knowledge of the life history and colonial habits of the honey bee (*Apis mellifica*), any educational work which does not emphasize and conduct this training is faulty. There is little good in telling a beekeeper to give his colonies 2 standard 10-frame hive bodies in the spring unless he understands why this is a desirable practice, and any understanding of why this is desirable reaches back into the very fundamentals of bee biology, a thorough knowledge of which is essential to an understanding of any rational system of modern apiary management. In short, a beekeeper should know bee biology first and then concern himself with the intricacies of hive equipment and its manipulation.

In accordance with this theory of teaching bee culture, seventeen beginners' schools were held this year in three counties (Talbot, Caroline, Prince George's). This is a continuance of an idea started during 1936, when the first Beginners' School was held in Towson (Baltimore County) and in 1937 when similar schools were held at Hagerstown (Washington County), Frederick (Frederick County) and Rockville (Montgomery County). The value and popularity of these county Beginners' Schools has been readily apparent to both beekeepers and extension worker and is indicated not alone from requests from men in other counties for

similar schools but also by the inauguration of better beekeeping practices and increased honey production in the apiaries of attending beekeepers.

These schools were scheduled and conducted in the following manner: First, all beekeepers on the college mailing list were asked if they were interested in attending such a school and, if so, to indicate which night would be most convenient. Invariably, there was hearty county response and only the selection of the night most convenient to the majority remained. The school then was conducted at the county seat on the same evening each week for 6 weeks. From the extension standpoint, the county school was simply based on the idea that there is a limit in the amount of subject matter that can be absorbed at one sitting—thereby necessitating multiple lectures, and secondly, that it is less expensive for one man to travel to the county than for 30-50 men to travel to the site of the state university.

As to subject matter discussed, the course followed approximately this schedule:

Lecture No. 1—Life history and habits of the individual bee	Biology
Lecture No. 2—Colony yearly cycle	
Lecture No. 3—Preparation of bees for winter and various manipulations	Application
Lecture No. 4—Spring management and swarm control	
Lecture No. 5—Extracted and comb honey production	
Lecture No. 6—Bee diseases and pests	

As to the value of these schools, it can definitely be said that:

(1) They have greatly increased the general knowledge of bee biology and have corrected many false notions and beliefs.

(2) They have crystallized and impressed several indispensable fundamentals of successful bee culture; namely, proper winter preparation, spring management and swarm control methods.

(4) They have helped in the gradual elimination of the box hive, still a major Maryland problem.

(5) They have taught every attending student the diagnosis and treatment of bee diseases, a knowledge of which is indispensable in 10 Maryland counties and which may be a deciding factor in preserving the freedom from diseases now apparently enjoyed by the remaining counties.

In short, these Beginners' Schools have been well attended in the 7 counties where they have been held (enrollment has averaged approximately 28); have been asked for by others and will be included as a

yearly part of the extension work, their limit being dictated solely by the expense involved and money available.

Beekeepers Meetings

In a further attempt to reach a higher percentage of the state's beekeepers than in previous years with the story of modern bee culture, 29 beekeepers meetings were scheduled and held at different points in the state. These meetings while sponsored by the Maryland State Beekeepers Association were more than social gatherings as the programs were carefully planned by the extension worker to have a program of educational value. The extension worker talked at 28 of these meetings and obtained several outstanding apiculturists for addresses. Demonstrations were conducted at the three regional (Eastern Shore, Western Shore and Mountain Counties) field meetings and four educational exhibits were set up at the Annual Winter Meeting held at Frederick which was generally agreed to be the most outstanding, valuable and best attended beekeepers meeting ever held in the state. Meetings of the type held cannot help but have a far-reaching effect on Maryland bee culture.

Personal Visits

It is unfortunate that every beekeeper cannot be visited and given personal instruction in his apiary every year. Four thousand beekeepers while desiring this, by their very numbers make it impossible. However, 414 personal visits were accomplished or approximately 10%.

As has been pointed out in previous annual reports, the personal visit from an educational standpoint cannot be surpassed by any other form of instruction. The beekeeper's own colonies and equipment form readily available teaching material. It is the finest teaching material extant, as it is his own personal property. Other factors making the personal visit unsurpassed for instruction in bee culture are that the beekeeper *sees* the instructor actually *do* the work, he may himself *help* in the work and he has every opportunity to ask questions. (Contrast this with the class where embarrassment keeps many men silent or where the questions to be asked are often forgotten in the classroom).

Literature

Generous use, through the cooperation of the U. S. Bee Culture Laboratory, was made of the various U. S. Department of Agriculture bee culture publications. Every known beginner was supplied with these valuable pamphlets and it was the desire of the extension worker to see that every Maryland beekeeper learned of their existence and how to get them.

Town and county librarians were urged to add several selected bee culture books to their stalls. County chapters are pursuing this as a project.

The leading Beekeepers Supply Manufacturers were furnished with county mailing lists so that every known Maryland beekeeper should receive catalogues of modern equipment.

Beekeepers at all meetings and on personal visits were encouraged to subscribe to the better trade journals, copies of which are always carried on extension trips and are placed on display at meetings.

In a further attempt to reach all of Maryland's beekeepers, a monthly mimeographed news letter entitled "The Pollen Basket" (now completing its fourth year) was sent to some 1,200 beekeepers each month.

The extension worker has endeavored on a three-fold front to make the most out of the available mediums of teaching; namely, the school-meetings, the personal visit and literature. Undoubtedly the story of modern bee culture is reaching vastly more beekeepers than ever before. That it is having its effect is evidenced by the increased colony production enjoyed by a high percentage of beekeepers, the gradual transfer to modern equipment, the fact that a large number of beekeepers are expanding their business, that Maryland's queen breeders are increasing, that sales of equipment in Maryland have materially increased, and that beekeepers with few exceptions sell out each year.

Bee Clinics

One educational phase of the Maryland picture a little apart from management and honey production but of tremendous bearing on the state's industry is the Bee Disease Educational work conducted on an intensified scale during 1938.

It has become apparent that the beekeeper must save himself if he is to save his colonies from the steady and increasing onslaughts of the ravages of American Foulbrood, a devastating disease of the brood of honeybees. Since only a trifling amount of state-supervised inspections were available in 1938 and these now at an end, the only recourse for the beekeeper is to learn to do his own inspecting. To this end a state-wide campaign was inaugurated which penetrated (at least by literature) into every section of the state, to teach the beekeeper to diagnose the various bee diseases and how to combat them.

Any campaign of this kind must first get the beekeeper's interest and support and then educate him in specific methods of diagnosis and treatment. The campaign was gotten under way through "The Pollen Basket." Needless to say many beekeepers in some 10 counties need no awakening to the problem and little training in the diagnosis or treatment of the disease, American Foulbrood. However, the bee men in the other 13 counties where disease has never been found but which will inevitably be invaded were necessary objects of the Foulbrood publicity campaign.

The problem of actually teaching the diagnosis of American Foulbrood was attacked and the task accomplished to a marked degree through the establishment of Bee Clinics throughout the state. The Bee Clinic consisted simply of a collection of diseased brood frames showing

the various stages of the disease and an experienced teacher to point out the valuable diagnosis characteristics. Thirty-two clinics were held. Since black board drawings and photographs of diseased brood are of only limited value the extension worker insisted that each beekeeper actually *see* the diseased brood itself—and by himself. Accordingly, at these Bee Clinics the beekeepers lined up and "went through the clinic" individually. As a result of this personal instruction at 32 points in the state nearly 1,000 beekeepers were familiarized in diagnosis and treatment.

Probably the greatest accomplishment of this campaign was the realization of the grave danger which confronts the entire state and an increased and state-wide (for the first time) demanding of a thoroughgoing apiary inspection service for Maryland. County Foulbrood Committees were formed, met at College Park and secured the inclusion in the University budget of an item to establish and maintain an inspection service.

Apiary Inspections

October 1, 1937, a small sum was made available to be used to employ two local county inspectors to work 26 days each in the heavily infected Harford, Baltimore, Prince George's and Montgomery County areas. They averaged only 14 days work during 1937 because of the excessive fall rains and continued the work in the spring of 1938 during which time they made the following inspections:

Apiary Inspections Made by Deputy Inspectors

Number of apiaries inspected	28
Number of colonies inspected	258
Number of apiaries diseased	12
Number of colonies diseased	32

In addition to these inspections the extension worker found time to make the following inspections:

Apiary Inspections Made by Extension Worker

Number of apiaries inspected	32
Number of colonies inspected	422
Number of apiaries diseased	7
Number of colonies diseased	17

The totals for all inspections for the year are as follows:

Combined Inspections

Number of apiaries inspected	60
Number of colonies inspected	680
Number of apiaries diseased	19
Number of colonies diseased	49
Per cent apiaries diseased	31.6
Per cent colonies diseased	7.2

Significant is the fact that disease was found to be present in 8 counties (Wicomico, Worcester, Harford, Baltimore, Carroll, Prince George's, Montgomery and Washington). Since the disease is believed almost certainly to exist in Queen Anne's, Caroline, Howard and Frederick Counties on the strength of 1935-36-37 inspections conducted by the extension specialist, we arrived at the unhappy realization that over half of the counties in Maryland are diseased.

The extension worker again urges that an adequate apiary inspection service be inaugurated and maintained in Maryland.

Orchard Pollination

The larger commercial fruit growers of Maryland used honeybees during the 1938 season for orchard pollination. In many cases the fruit growers own colonies and maintain them on their property the year round. In other cases colonies were rented from beekeepers and moved into the orchard for the period of fruit bloom. Of the two methods of obtaining bee pollination the extension worker is convinced that the only satisfactory method involves rental, and rental only was recommended. Several reasons dictate this recommendation. Firstly, the fruit grower almost without exception is not a beekeeper and has no competent beekeeper in his employ which simply means that the hives receive practically no attention. Secondly, the usual fruit grower-owner apiary is located at one side of the orchard, which requires considerable flight from the hives to the farther reaches of the orchard. In small orchards, 10 acres or under, this may be satisfactory but it cannot be recommended where larger acreages are involved. The bees simply will not make the long flights necessary during the cold, cloudy or windy days which annually mark the usual blooming period. Thirdly, the possibility of spray poisoning militates against the permanent orchard location for an apiary. Fourthly, horses drawing vehicles are in danger of being stung and bees may annoy the pickers. This all must be considered. All in all, the orchard is no place for a permanent apiary even when a competent apiarist can be employed. By far the most satisfactory arrangement for the fruit grower is to leave bee culture to the beekeeper and rent his colony needs each year.

These recommendations were made to all fruit growers contacted and the idea is gaining favor, especially with the smaller growers. The extension worker was successful in effecting a number of contacts between fruit growers and beekeepers which will continue on a yearly basis and will not only solve the fruit grower's problem in assuring him strong, well-cared for colonies, especially reared for him, but will add a yearly supplementary income to the beekeeper.

The Permanent Rental Plan seems to have possibilities where thoroughly reliable parties are brought together and will be stimulated by the extension worker each year until every Maryland fruit grower is a participant in the plan.

Honey Marketing and Publicity

It is generally agreed by leaders in apiculture that honey needs more and better advertising. Even in a state such as Maryland, lying as it does in the heart of the eastern retail area and in close proximity to Washington, Baltimore and Philadelphia, increased honey advertising is not only desirable but essential.

It is also essential that a large percentage of the Maryland beekeepers now putting honey on the market learn to package their product in a more up-to-date manner. Comb honey still comes to market, travel stained in soiled section boxes, ungraded as to weight and quality and uncellophaned. Extracted honey also is sent to the market carelessly bottled.

In an effort to obtain increased advertising for honey in the state and also to educate the delinquent beekeeper to better methods of packaging, the extension worker allocated a large portion of his time toward the development of a state-wide County Fair set-up which would give beekeepers in every section of the state an opportunity, not only to exhibit their products but also an opportunity to see how other beekeepers package theirs and simultaneously bring displays of bee products before thousands of the fair-attending public, thereby securing free, advertising which the beekeeping industry could not begin to afford if they had to pay the usual advertising rates.

At the beginning of the year a plan was outlined for an expanding Maryland Fair set-up to be completed in two years, if possible, and to remain a permanent part of the Maryland bee culture scene. This called for the following:

1. The development of a standard Maryland Fair Premium list to be approved by both the Fair Board and the Maryland State Beekeepers Association.

2. The adoption and inclusion of this list in the catalogues of 9 County Fairs (Cumberland, Hagerstown, Frederick, Taneytown, Bel Air, Charles, Calvert, Marlboro, Cambridge), the State Fair (Timonium) and the Winter Farm Products Show.

3. Increased prize money at Timonium (from $100 to $200), Frederick (from $50 to $100), Bel Air (from $30 to $100) and the Winter Show ($50 to $450). (Hagerstown's $100 offered is sufficient.)

4. The offering of prize money for the first time at Cumberland, Taneytown, Charles, Calvert, Marlboro and Cambridge.

5. Securing permanent and suitable space at each of the 10 fairs according to the specific needs for a first-rate bee products exhibition.

All of the Fair Secretaries were contacted personally and while only Cumberland added our list to their catalogues, the other fairs were sympathetic and it is believed will complete the cooperation needed for the permanent fair set-up outlined above. Timonium gave increased space and did considerable carpenter work. The Farm Products Show increased their prize money to $450.

The interest, both of the beekeepers as exhibitors and the public as the object of advertising, was extremely encouraging. The Timonium exhibits surpassed anything we attempted at the State Fair in previous years. The Cumberland and Hagerstown exhibits were excellent, only larger and more suitable space being necessary to complete the picture.

The Frederick exhibition was well supported considering the small prize money available. However, the space given the beekeepers was entirely unsuited and must be rectified another year if a real exhibit is to be set up.

The outstanding success of the Fair set-up was the enthusiastic support given the "Honey Sweepstakes' at the Winter Farm Products Show held in Baltimore by the beekeepers. Nearly all County and State fair prize-winning entries were saved and brought together at the "Honey Sweepstakes." This gave real state-wide competition for the first time in Maryland.

Beekeepers Organization Work

New chapters of the Maryland State Beekeepers Association were established at Cumberland (Mountain Counties Chapter), Denton (Upper Eastern Shore), Talbot (Middle Eastern Shore), and Salisbury (Lower Eastern Shore) and College Park (Metropolitan Chapter).

Twenty-nine beekeepers meetings were held throughout the state in 1938 in addition to the Beginners' Schools. The annual meeting at Frederick, featuring nationally known leaders in bee culture and lobby exhibits, was considered the finest beekeepers meeting ever held in the state.

REPORT

OF THE

Maryland Vegetable Growers' Association

TWENTIETH ANNUAL MEETING

Morning Session

Wednesday, January 11, 1939

Baltimore, Maryland

The twentieth annual meeting of the Maryland Vegetable Growers' Association was called to order at the Lord Baltimore Hotel by the President, Egbert Hawkins, Harmons, Maryland, at 10:00 A. M. After welcoming the members, the President introduced Mr. F. S. Holmes as the first speaker.

*WHAT CAN BE EXPECTED OF A VEGETABLE SEED LAW?

F. S. HOLMES, Chief Seed Inspector
University of Maryland

The enactment of vegetable seed laws by the several states has lagged behind the enactment of agricultural, or field, seed laws. While only two states now lack agricultural seed laws, fifteen states have no vegetable seed law of any character and less than a dozen states have adequate laws actively enforced. The Association of Official Seed Analysts agreed upon uniform legislation for field seeds in 1917, but it was twenty years later before the same group took similar action for vegetable seed legislation. For some reason there has not been as strong a demand for vegetable seed legislation as for field seed legislation.

Perhaps one of the principal reasons for this condition is to be found in the relatively greater care with which vegetable seeds are bought by vegetable producers. Vegetable seeds are unquestionably bought with more care than field seeds. If vegetable seeds do not produce a satisfactory crop either because of poor germination or because of lack of trueness to type there is little chance that the grower will not recognize the fact and complain vigorously to the dealer from whom he bought the seed. In order to keep his trade the vegetable seed dealer must

*Abstract

always be on his guard to see that his customers get satisfactory seed. For this reason the purchaser of vegetable seeds is not as likely to get unsatisfactory seeds as the purchaser of field seeds.

It would be a mistake, however, to conclude that the vegetable producer does not have his seed problems. These problems differ somewhat from the seed problems of the producer of field crops. Percentages of mechanical purity and weed seeds are ordinarily of little practical consequence to the vegetable producer. Matters of seed-borne diseases, percentage of germination, and genuineness of variety are of prime importance to the grower of vegetables. A vegetable seed law should be enacted with these problems in mind. Vegetable seed legislation should provide adequate facilities for field trials. Without such a provision little benefit could be expected from a vegetable seed law.

Field trials of vegetable seeds would not call for extensive acreage. It would not be necessary to grow all samples collected in the enforcement of the law each year. Only certain kinds need be grown in any particular year. This should provide adequate control inasmuch as dealers would not know what kinds were to be grown from year to year.

The production of vegetable crops is one of the major agricultural undertakings of Maryland, the average value of vegetables produced from seed annually being close to $10,000,000. So large a share of our annual agricultural production would seem to be entitled to such protection as should come with a vegetable seed law.

It should be borne in mind that as more and more states enact vegetable seed laws those states without such laws will inevitably become the dumping grounds for the least desirable seeds. It is quite natural for the seed trade to dispose of its inferior stocks in those regions where there is little apparent interest in the quality of the seeds planted. Maryland vegetable producers should keep this fact in mind. National vegetable seed legislation appears likely in the near future. If a Federal vegetable seed law is passed there will be all the more reason for Maryland to take full advantage of it by having its own legislation to supplement whatever interstate regulation we may have.

During the calendar year 1938 over a thousand samples of vegetable seeds were submitted to the Seed Laboratory at College Park. Information as to so many samples would not be sought if there was not already a lively interest in the quality of vegetable seeds. Whether such interest is keen enough and general enough among vegetable producers should determine whether Maryland should have a vegetable seed law. A vegetable seed law without a genuine interest in it on the part of vegetable growers would be of little value to the industry and might even prove detrimental through engendering a sense of false security. To be of any real value to the State a vegetable seed law must be carefully written, adequately financed, and wholeheartedly supported by our vegetable growers.

SUGGESTIONS FOR IMPROVING THE BALTIMORE WHOLESALE FRUIT AND VEGETABLE MARKETS

S. H. DEVAULT, Professor of Agricultural Economics and Farm Management

University of Maryland.

It has been known for many years that a large part of the consumer's dollar spent for fruits and vegetables goes to pay the distribution costs from the farm to the consumer. The margin taken by the retail merchant is the largest item in the distribution of fruits and vegetables although transportation, handling charges and other costs are very important. Fruits and vegetables are perishable. They are bulky, rather low in intrinsic value and transportation charges are high on this class of commodity.

Our early markets developed on the water fronts because, in the early days, most of our fruits and vegetables came by boat. With the development of railroads, more and more produce came by rail which created a complex marketing structure, owing to the fact that the railroad terminals were frequently a long distance from the markets which developed on the water fronts. This has necessitated, in more recent years, some changes in the railroad terminal marketing facilities. The development of motor truck transportation during the Twentieth Century has further complicated the problem, owing to the fact that the railroad terminals are not equipped to handle truck receipts and, further, that adequate space has not been available in our large terminal markets to accommodate the farmers' and shippers' trucks.

Our markets have not been well planned and coordinated. In many cities, the facilities are antiquated. Improvements of the organization, facilities and practices of many of these markets are urgently needed. Improvements should be made which would coordinate and centralize the receipts by boat, rail and truck so as to provide a good market for farmers, shippers and produce dealers. A good market is one that centralizes rail, boat and truck receipts for all producing areas so as to provide a full line of goods for buyers, creating a competitive market condition and a decrease in the amount of time necessary for the buyers to visit the various markets and make their purchases. A good market is well located, accessible in the shortest space of time to retail stores, as well as to arterial highways, and located on low cost land so as to permit of an economical layout and room for further expansion. The market must also be well laid out so as to permit easy access for both in and out deliveries and future needs of both the dealers operating in the market and those upon whom market maintenance depends.

The increased truck shipments have added to the congestion of our terminal markets and, owing to the fact that there is no agency for reporting accurately upon the shipments of fruits and vegetables to our terminal markets, there is lack of coordination of receipts to consumptive market requirements.

The arrival of fruits and vegetables in our terminal markets, through several transportation agencies, has led to a split condition of the markets. This is not only true in Baltimore City, but in many other markets. In Baltimore, for example, if a carload of a specific commodity comes by rail, it is sold at one place; if the same quantity of the same commodity is brought in by truck or boat, it must be sold at a different place. Furthermore, when some commodities are being brought in only by truck, they are for sale at only one place while other commodities which arrive only by boat or rail are sold at another place. Therefore, the markets are split, not on the basis of type of sale (wholesale or jobbing) but on the basis of whether the commodity arrives by boat, rail or truck.

In order to carry a full line of produce, many wholesale receivers are operating in several different markets involving extra cost. Large buyers cannot purchase a complete line of produce at any one wholesale market. This causes many retailers to go direct to the wholesale markets for their supplies.

The Department of Agricultural Economics of the University of Maryland recently completed a very thorough study of the wholesale fruit and vegetable markets in Baltimore City, but time will not permit me to present much of the statistical material obtained through this study. Our study indicated that Baltimore receives about 36,000 carloads of fruits and vegetables annually, about 17,000, or 48 per cent, of which arrive by truck. Of the total receipts in Baltimore, approximately one-third is Maryland-grown produce.

Truck receipts make up 48 per cent of the total receipts in Baltimore; rail receipts, 27 per cent; and boat receipts, 25 per cent.

Of the total truck receipts at the wholesale markets in Baltimore, 46 per cent come from states other than Maryland. About 65 per cent of the total truck receipts are delivered at the Marsh Market, and nearly 35 per cent at the Camden Market. Of the produce which is received at the Marsh Market, about 30.6 per cent comes from outside of Maryland. On a value basis, however, the out-of-state receipts amount to 24.7 per cent of the total receipts at the Marsh Market.

The distribution of produce at the Marsh Market is as follows: To canners, 43.4 per cent; to jobbers at Camden Market, 30.8 per cent; to jobbers at Marsh Jobbing Market, 5.3 per cent; to chain store warehouses, 3.7 per cent; to other Baltimore markets, 1.8 per cent; and to out-of-town buyers, 15 per cent.

Our study indicates that the time spent by farmers who market their produce through Marsh Market, Baltimore, is approximately 10 hours and the time spent by farmers who market their produce through Camden Market is about 3½ hours. Both of these markets are congested. Marsh Market will accommodate only about 126 trucks under the covered space. During at least seven months of the year, this market is inadequate to accommodate the farmers' trucks. During the peak of the season, the number of trucks that arrive daily ranges between 500 and 600. Not only do these markets consume a lot of the farmer's time, but also it

takes more than what should be the necessary time of the dealers and merchants in the markets. Through more adequate marketing facilities, the time of both farmers and merchants could be greatly reduced.

The split condition of the markets in Baltimore leads to unnecessarily high costs of distribution. It is rather difficult to determine the distributive costs within the city but we have estimated that the total cost of moving fruits and vegetables from receiving points to the respective distributing markets in Baltimore City amounts to approximately $500,000 annually.

Sufficient study has been made of these markets to indicate the essential weaknesses. The question is: What are we going to do about it? Changing a market structure after it is once established is not an easy matter. In many of our cities, it has taken from a decade to a quarter of a century to bring about an essential change in the market structure. These improvements have sometimes come about through condemnation of the marketing properties for use for other purposes. For example, the Old South Water Street Market in Chicago was demolished in order to provide for the extension of Michigan Avenue and the Old Center Market in Washington, D. C., was moved in order to provide for the expansion of new Government buildings.

Several plans are suggested for improving the Baltimore wholesale fruit and vegetable markets. I shall list briefly the problems in each market and the proposed solution. The most desirable move would be to consolidate the several markets and establish a new modern terminal. This would, of course, be expensive and would necessitate the State or Federal Government, or both, reimbursing property holders for any losses they might sustain in moving to a new location. Other methods of improving the market are outlined in the plan presented on the following pages.

One proposal is to convert Camden Market into a parking area. This could be done through condemnation proceedings and the reimbursing of the property owners for the value of their properties. To do this, it would be necessary to issue bonds to the extent of the value of the properties. The total value of land and buildings in the Camden Market area is about $1,831,705. The market contains approximately 9 acres. If this market were converted into a parking area, it would be possible, through the rental of space for the parking of automobiles, to reimburse the owners of property in the market for any losses occurred. This space would accommodate approximately 2,450 cars at one time and at a moderate rental of 25 cents per day per car, a yearly revenue amounting to about $183,000 could be obtained. The expenses in connection with the converting of this property into a parking area and maintaining it as a public parking space would amount to about $53,000 a year. On the basis of the assessed value of the property, $1,831,705 in bonds over a twenty-year period would have to be curtailed at the rate of $91,585 annually. This sum added to the $53,054 in expenses amounts to $144,639, which represents the annual expenses, including interest plus the retirement of the bonds over a twenty-year period. The estimated annual

revenue from the rental of the space is $183,750 and the estimated annual expenses, $144,639. It is thus apparent that the receipts from the rental of space would be ample to retire the bond issue over a period of twenty years.

THE BALTIMORE WHOLESALE FRUIT AND VEGETABLE MARKETS

Problem	*Solution*
Marsh Market:	
1. Inadequate to handle present volume of business. The capacity of the market is approximately 126 trucks. Daily arrivals during the peak months average about 600 truck loads.	1. Consolidate this market with the boat, rail and jobbing markets of the city at some location where there would be modern facilities and adequate space to handle all of the produce rapidly.
	or
2. Facilities are indequate for the parking of buyers' trucks and the transferring of produce from one truck to another.	2. Improve and enlarge the present market to approximately five times its present capacity.
	or
3. The market is a seasonal one. The volume of business for the summer months is much greater than for the winter months.	3. Combine the receipts at this market with those of the Pa. R. R. Produce Terminal. This would permit a steady volume of business for the entire year.
4. There is no segregation in the market of local and out-of-state produce.	
Camden Market:	
1. The market is antiquated and inadequate to handle the present volume of business. a. Traffic congestion b. Lack of parking facilities. c. Poor display facilities d. Poorly arranged buildings e. Poor refrigeration facilities.	1. Consolidate the boat, rail and other truck receipts at a new modern market.
	or
	2. Improve and enlarge the present market to adequately handle the present volume of business.

Problem	*Solution*
2. The congestion of traffic and condition of the buildings present a problem in fire protection.	**or**
	3. Convert Camden Market area into a public park, or a municipally operated parking area, the revenue from which would make it self-supporting and maintain the present city revenue from taxes.
Pennsylvania Railroad Terminal Market:	
1. New and modern but located a long distance from the center of distribution, thus adding greatly to the cost of distributing fruits and vegetables in Baltimore.	1. Consolidate with other markets at a new modern terminal.
Conditions of the Baltimore Wholesale Fruit and Vegetable Markets as a Whole:	
1. The markets are split, making it impossible to establish a fair market price at any one of the markets.	1. Consolidate the several markets and establish one new modern terminal.
2. Markets are widely separated making cross hauls necessary and expensive.	2. Establish a regional or auction market at some point near Baltimore, but outside the congested areas.
3. Lack of coordination of selling hours at the several markets.	3. Improve and expand the facilities at Marsh and Camden Markets to care for the present volume of business adequately and obtain sufficient land for future expansion.

Several possible tracts of land have been surveyed in Baltimore with respect to their cost and adaptability for a market. A model market in Baltimore would require a space of 40 acres or more. It should probably be considerably above the minimum requirement of 40 acres in order to provide for expansion in years to come. Our survey indicates that there are some suitable sites in Baltimore, ranging in area from 73 acres to 136 acres. Some of these tracts would be more expensive than others to acquire. Assuming that the market would require 50 acres, one tract of land might be purchased for around $108,000; another tract, at $1,476,-000; another tract of 50 acres at $2,667,000; and another tract at $2,831,-000. The cheaper tracts of land, of course, are located more remote from the business center of Baltimore.

We have made a plan for a model market in Baltimore. This plan can be best explained by referring to the drawings. The market space required for a market of this type would be approximately 40 acres. This would provide a layout equivalent to take care of the market needs of Baltimore City for many years to come and would give Baltimore a market comparable with some of the other recently established model terminal markets.

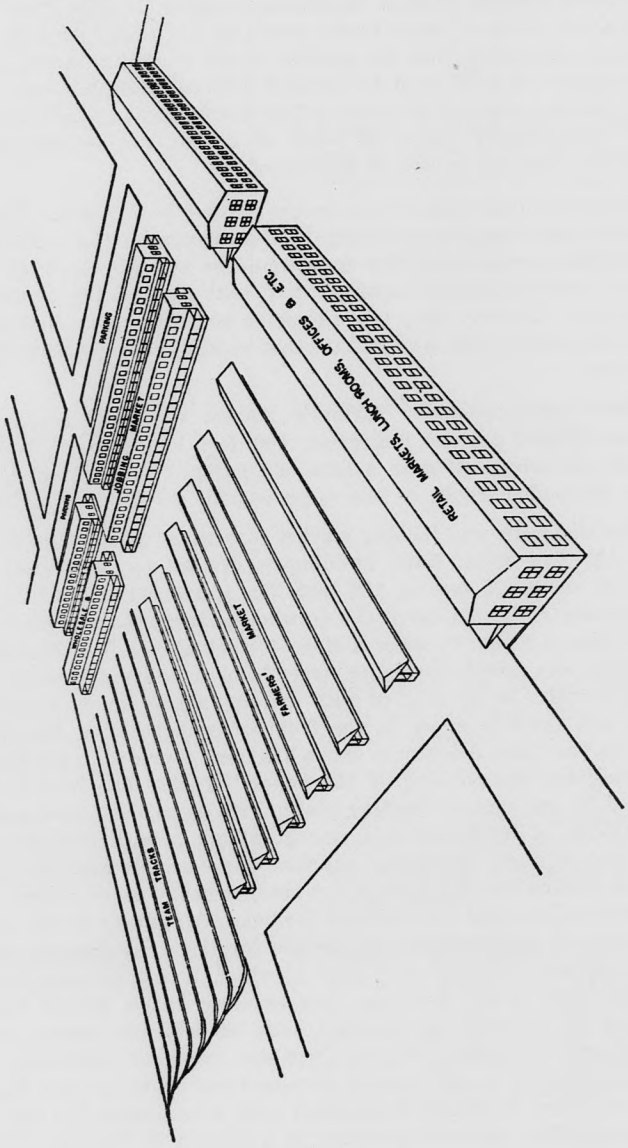
This plan provides a farmer's market that will accommodate 600 trucks. There are six platforms, 500 feet long and 10 feet wide, the platforms being tail gate height and covered with a roof that extends over the loaded trucks 20 feet to protect the produce during bad weather.

The wholesale and jobbing market consists of 4 buildings, 500 feet long and 100 feet wide. Each building is divided by temporary partitions into 25 stores, 20 feet by 100 feet. The stores are divided by temporary partitions, so that a large dealer who needs more than one unit can remove the partition to make a store 40 feet by 100 feet. The floors of the building are raised above the street level to tail gate height. Space has been provided in the rear of each building for 50 trucks to unload at one time and there is space in the front of each building for 50 trucks to load at one time. Additional space has been provided in the front of each building for the parking of 100 buyers' trucks. The four buildings are heated by one central heating plant. Provisions have been made for the installaton of individual cold storage plants in each store for the carrying over of small day-to-day supplies of perishable products. This provision is optional on the part of the produce dealer since a large number of dealers do not need cold storage facilities. A railroad track extends past the rear of each building to provide for the unloading of cars directly into the stores. Space has been provided for an auction room on the second floor of one building. One building has a second floor for the storing of products and supplies such as potatoes, onions, baskets and containers. The other two buildings are one-story buildings, since most produce dealers do not need a storage room on the second floor. One of the one-story buildings is provided with a basement for the storing of bananas. Office space is provided on a balcony in the rear of each store

so that the dealer can observe and direct sales on the produce floor from his office.

The team tracks provide space for about 160 cars. The tracks are located 50 feet apart, the intervening space being paved so that large buyers might unload directly from the cars to their trucks. All streets

TENTATIVE PLAN FOR A WHOLESALE FRUIT & VEGETABLE MARKET


RETAIL MARKETS, LUNCH ROOMS, OFFICES & ETC.
PARKING
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PARKING

are 100 feet wide to prevent traffic congestion. In addition, there are cross streets and no dead end streets. This provides for rapid movement of traffic in and out of the market area.

Mr. F. Ridgely Todd, reporting for the Committee on reorganization, presented three amendments to the Constitution, which after some discussion, were unanimously adopted.

(Since the Constitution and by-laws have never been published, it seems desirable to include it in its amended form at the end of this report.—Secretary).

Afternoon Session

PROBLEMS CONFRONTING THE VEGETABLE GROWER

By Allen G. Waller
Secretary-Treasurer
Northeastern Vegetable and Potato Council, New Brunswick, N. J.

I believe the problems confronting the vegetable grower fall into two classes; those in which the individual grower can accomplish something to meet conditions by appraising his own situation, and then there are other conditions which can only be met by group or collective action.

We have had a tremendous development and growth of acreage in vegetables for fresh market shipment, as well as for processing. It is quite likely that the vegetable industry, particularly in the northeast, has not quite fully recognized how large this development is and what it may mean to us.

In a good many ways our vegetable growers in the northeast and along the seaboard are in the same position that agriculture in the northeast found itself through the period roughly from 1870 to 1900 when the middle west was homesteading and growing up. All through that period the agriculture of the northeast went through discouraging financial conditions and many losses. It finally resulted in a complete shift in type of farming and products.

It may be that with the total vegetable supplies that are at present available the year 'round, we in the northeast may have to change either in quantity of products or in method of handling our products, having in mind the possibility of new processing methods by which our production may be marketed over a longer period of the year than is now the case.

With the present plentiful supply of fresh vegetables available throughout the year, our vegetables coming on the market through the early summer months and fall, do not hold the same position in the consumer's taste as they did before fresh vegetables were available throughout the year in large supplies and at rather reasonable prices.

Now, turning to some charts which indicate more clearly in a visible

way than can be expressed in words just what has happened, taking the U. S. Census figures on vegetables grown for sale, it will be found that from 1919 to 1934 the acreage of vegetables increased 165 per cent, while the population of the United States increased only about 20 per cent in this same period. By geographical sections, the north increased 115 per cent, the south 213 per cent and the west 229 per cent. In other words, the increase in vegetable acreage has taken place at a more rapid rate in other sections of the country than in the east and northeast and it is important to notice that the acreage of 17 vegetables for fresh market shipment in the United States reached a record high in 1938.

The average yield per acre considering all vegetables declined, in general, from 1920 to 1935, with a slight increase in the general average yield during the past three years. This tendency towards a decline in yield is to be expected when the acreage has expanded so rapidly, as this would indicate that there is a considerable acreage on land which may not be best adapted to vegetable growing and also during the declining price period, probably not so much care was taken in producing the crop.

On the basis of average value per acre, considering 17 vegetables for fresh market, this declined rapidly from the early 20's through 1935 with a slight increase during the past two years. For the period 1931 through 1936, the general average value per acre was less than half what it was in 1919.

The total acreage of 8 commercial truck crops for manufacture has for the last four years been at a peak, being higher than for any year previous back to 1918 with the possible exception of 1930. Considering individual vegetables, the largest increases have been in the less staple vegetables, considering among the staple vegetables such crops as white potatoes and cabbage. In the case of tomatoes for market, there have been very substantial increases in nearly all parts of the country. With respect to processing, for the last two years the total supply of all canned vegetables made up of the current year's pack plus the carry-over from the preceding year has been higher than any previous year.

Some idea of the growth of the quick freezing process as applied to preserving vegetables may be had from the fact that five years ago only two and one-half million pounds of vegetables were quick frozen, while on October 1, 1938, there were 69,239,000 pounds in cold storage as compared with 26,000,000 pounds on October 1, 1937.

These various figures indicating a broad picture of what the vegetable industry is up against in the matter of supplies available, competition and the development of manufactured or processed business, certainly point to the fact that the industry must recognize this situation and take steps to meet it, as it has meant relatively very low prices and, of course, correspondingly low incomes. From the fact that processed vegetables or vegetables grown under contract have over a period of years shown less fluctuations in prices, it may be that with the new process in course of development, there is an opportunity for the vegetable industry to take part in this as one means of meeting the situation. This

would have the effect of distributing our marketing season over a longer period of the year and would also give our vegetable industry the benefit of well organized sales outlets which accompany the processed vegetable developments.

This picture has been more or less along the line of what the industry may be able to do or should consider in a collective way. So far as the individual is concerned and what he can do as an individual, probably the most effective procedure for him to follow is to produce whatever vegetables he is in the habit of growing at the lowest possible cost per unit. This is always a safe and effective measure for the individual to follow. Each individual knows his own farm and his own field as to what they are able to produce in the way of yield and quality. At certain price levels it is necessary to obtain certain yields per acre if a grower is to either break even or make a profit.

We have figured in New Jersey in the case of most of our important vegetables the yields that are necessary under certain prices received to do this. For instance with sweet potatoes, if the farm price is 50 cents per bushel, the yield necessary is 309 bushels per acre. If 60 cents per bushel is received, a 209 bushel yield is needed, and if $1.00 per bushel is the farm price, 91 bushels are needed per acre. This is based on 1938 figures and a cost up to harvest of $65.00 per acre.

In similar fashion the grower should consider whatever the vegetable may be that he is attempting to grow.

In answer to the question just raised about the Northeastern Vegetable and Potato Council, I would say this: The Council is made up of delegates from the northeastern states representing the vegetable and potato interests. Their purpose is to act in an organized way towards helping meet the problems of the northeast through regional action. Discussions with the Federal people and helping to secure programs from Washington that will be more adapted to the east and northeast is their purpose. Last year it was largely through the efforts of this Council that the Federal Surplus Commodities Corporation undertook to purchase a number of different perishable vegetable crops at a time through July, August and September when surpluses existed on the market. It was felt in general that this was a helpful move and was the first time that the FSCC had done this. In other ways a regional group such as this can organize and present to Washington matters that should be considered concerning the vegetable industry and also interpret how various programs operate.

There has been very regular attendance by delegates from New York, Massachusetts, Connecticut, Pennsylvania, New Jersey and at the last few meetings Virginia and Maryland, while the other states including Maine have been represented at some of the meetings.

I have enjoyed very much the opportunity of discussing with you briefly the vegetable situation as some of us see it and to point out the reasons why the growers as individuals and collectively must give serious thought to adjustments that will have to be made.

COMMERCIAL ACREAGE AND PRODUCTION
OF 22 TRUCK CROPS, 1929-38[1]

Year	Acreage			Production			Index of prices rec'd. by prod. 1924-29=100	
	For manufacture	For market	Total	For manufacture	For market	Total	For manufacture	For market
	1,000 acres	1,000 acres	1,000 acres	1,000 tons	1,000 tons	1,000 tons		
1929	1,184	1,290	2,474	3,042	5,692	8,734	100.2	96.0
1930	1,378	1,440	2,818	3,344	5,829	9,173	98.5	87.1
1931	1,121	1,485	2,606	2,394	5,738	8,132	84.0	73.8
1932	782	1,520	2,302	2,047	5,694	7,741	65.5	61.3
1933	897	1,427	2,324	1,990	5,069	7,059	69.4	65.2
1934	1,155	1,627	2,782	2,641	5,947	8,588	75.7	66.4
1935	1,457	1,603	3,060	3,358	5,830	9,188	77.9	72.0
1936	1,368	1,658	3,026	3,330	6,094	9,424	83.9	75.9
1937	1,564	1,691	3,255	3,841	6,255	10,096	88.2	77.3
1938	1,359	1,707	3,066	3,581	6,647	10,228	80.8	65.7

[1]Crops for markets: artichokes, asparagus, lima beans, snap beans, beets, cabbage, cantaloupe, carrots, cauliflower, celery, sweet corn (N. J.), cucumbers, eggplant, kale, lettuce, onions, green peas, green peppers, spinach, tomatoes, and watermelons. Crops for manufacture: asparagus (Calif.), lima beans, snap beans, beets, cabbage for kraut, sweet corn, cucumbers for pickles, green peas, pimentos, spinach and tomatoes.

DO WE NEED STANDARDIZATION OF VEGETABLE PACKAGES?

C. H. MAHONEY, Professor of Horticulture
University of Maryland.

In view of the interest by marketing agencies, chain store buyers, and independent growers in the use of standard containers for fresh vegetable products, it seems that the vegetable producers should themselves take more interest in studying this problem. There is a very definite trend towards compulsory use of standard containers in order to clarify reports and sales by merchandizing agencies. The most practical way for buyers and growers to follow the price trend and volume of sales on a single commodity, such as spinach from Florida through Virginia into Maryland and up the New England Coast, is on the basis of reports on sales and truck movements which must be interpreted in terms of definite quantity and grade.

I think all of you will admit that it would be much fairer to you as growers if you had some voice in the promulgation of the containers which you must use in merchandising your crops. If our vegetable crops are sold in containers which are used based upon volume of contents such as baskets, hampers, and splint baskets, the exact sizes of these containers have been established by law. If it is decided, therefore, that certain hampers or baskets should be used for certain crops, no legislation would be necessary to establish sizes of these containers. If, however, those crops which are sold by weight or count or to be merchan-

dised in some container other than in basket, hamper or splint basket, then these must be legalized by law. If this is to be considered, the growers themselves should discuss this problem and on the basis of their experience make suggestions through their vegetable grower's organization.

The Northeast Vegetable and Potato Council have at their meetings in New York City discussed this question of standardized containers and packages for vegetables. This Council consists of representative delegates of the vegetable industry of approximately 11 of the Northeastern states. It is possible that this group will make definite suggestions on containers to be carried back to the growers in the various states for their approval or rejection. This in turn may lead to the establishment of standard containers for the important crops in the Northeastern states. It is a step in the right direction since it is being originated by representatives of actual groups of growers and in case there is a movement for the establishment of a National Act, this group would have some voice in the establishment of container standards. Therefore, it seems advisable that the Maryland Vegetable Growers, particularly those of you who are shippers, should consider this problem carefully in view of your own needs, and should be represented in the hearings in New York.

It might be of interest to many of you growers to know what National Acts have been established pertaining to containers and for those who are not familiar with the present existing statutes, an outline prepared by Mr. L. C. Carey, Specialist in package standardization, of the Bureau of Agricultural Economics, U. S. Department of Agriculture is presented. The details of these four acts with the exact details for the containers are very clearly given in Service and Regulatory Announcements Nos. 104 and 116, with amendments published by the Bureau of Agriculture Economics of the U. S. Department of Agriculture. Part of these are given below taken directly from the above mentioned publications.

EXISTING FEDERAL LEGISLATION

"1. STANDARD BARREL ACT (38 Stat. p. 1186).

a. Approved March 4, 1915: effective July 1, 1916.

b. Establishes and fixes the dimensions of the standard barrel for fruits and vegetables and other dry commodities, and the standard cranberry barrel.

Provides for the following subdivisions of these barrels: one-third, one-half and three-quarters.

Forbids sale, offering, or exposing for sale of non-standard barrels containing fruits, vegetables or any other dry commodities.

c. Standard Dimensions:

Fruit and Vegetable Barrel: Capacity 7,056 cubic inches.

Length of staves	28½ inches	
Diameter of heads	17⅛ "	
Distance between heads	26 "	
Circumference of bulge	64 "	(outside)
Thickness of staves	4/10 "	maximum

Cranberry barrel: Capacity 5,826 cubic inches.

Length of staves	28½ inches	
Diameter of heads	16¼ "	
Distance between heads	25¼ "	
Circumference of bulge	58½ "	(outside)
Thickness of staves	4/10 "	maximum

d. Nature of the Act: It is a weights and measures law and applies to all transactions within a State as well as those in interstate commerce. It supercedes any State laws or city ordinances in conflict with it.

e. Enforced by Bureau of Standards, Department of Commerce:—and where re-enacted by States, by local sealers of weights and measures.

2. STANDARD CONTAINER ACT OF 1916 (39 Stat. p. 673).

a. Approved August 31, 1916: effective November 1, 1917.

b. Establishes standard sizes and dimensions of Climax baskets and standard sizes for berry boxes and till baskets.

Forbids manufacture for shipment, sale for shipment, or shipment of non-standard baskets in interstate commerce.

c. Standard Sizes established:
Climax baskets: 2, 4 and 12 quarts, dry measure.
Berry boxes: ½ pint and 1 quart, dry measure.
Till baskets: multiples of the dry one quart.

d. Nature of the Act:

It is an interstate commerce law and affects only transactions in interstate commerce.

e. Enforced by Bureau of Agricultural Economics, Department of Agriculture.

3. STANDARD CONTAINER ACT 1928 (45 Stat. p. 685).

a. Approved May 21, 1928: effective November 1, 1929.

b. Establishes standard sizes for hampers, round stave baskets (including 'straight-side' or 'tub' baskets) and splint or market baskets.

Requires manufacturers to have specifications for such baskets approved. Forbids manufacture, sale and shipment of non-standard sizes and non-approved baskets of such types. Provides for seizure of non-standard sizes. Makes inoperative all State weight-per-bushel laws so far as fruits and vegetables packed in baskets standardized by the law are concerned. Regulations provide for identification marks indicating that specifications have been approved.

c. Standard sizes established:

Hampers and Round Stave Baskets: ⅛, ¼, ½, ⅝, ¾, 1, 1¼, 1½, and 2 bu.

Splint Baskets: 4, 8, 12, 16, 24, and 32 quarts.

d. Nature of the Act:

It is a weights and measures law and affects all transactions within a State as well as those in interstate commerce. It supercedes any State laws or city ordinances in conflict with it.

e. Enforced by Bureau of Agricultural Economics, Department of Agriculture.

4. FEDERAL FOOD AND DRUGS ACT OF JUNE 30, 1906. (34 Stat. 768) as amended by the so-called 'net weight law' (Gould Amendment 37 Stat. 732); and the Kenyon Amendment (41 Stat. 271):

a. 'Net Weight Amendment' approved March 3, 1913.

b. Nature of the Act:

It is a branding law. It affects all articles of food in package form when shipped in interstate commerce. It applies to all packages of fruits, vegetables, meats, grains, cereal products, and food for domestic animals, whether in barrel, boxes, crates, cartons, baskets, hampers, bags, or other closed containers.

c. What it does:

It provides that articles of food are misbranded if in package form, the quantity of the contents be not plainly and conspicuously marked on the outside of the package in terms of weight, measure, or numerical count.

It provides that reasonable variations shall be permitted and that tolerances and also exemptions as to small packages shall be established by rules and regulations.

Misbranded articles of food coming within the scope of the Federal Food and Drugs Act are subjected to seizure under Section 10 of that Act, the shipper is subjected to criminal prosecution under Section 2 of the Act, and upon conviction to the penalties prescribed for its violation.

Regulation 26 of the regulations for the enforcement of the Federal Food and Drugs Act prescribes the character of statements required to be marked upon food produce packages; the tolerances and variations from the quantity of contents marked on the packages which shall be allowed, and the exemptions in case of packages deemed small.

d. Enforced by: The Food and Drug Administration, U. S. Department of Agriculture, Washington, D. C."

WHAT THE INSPECTOR FINDS IN VEGETABLE CONTAINERS*

W. C. BEAVEN, Marketing Specialist
University of Maryland.

This subject is so broad in its scope and implications that we will only have time to try to hit a few high spots. It might be well to consider for a moment the word "inspector." When we speak of "the inspector" we usually mean one of the licensed Federal-State shipping point inspectors, or one of the receiving point inspectors in the terminal markets. However, there are many other "inspectors" that have much to do with your vegetables from the time they are harvested until they reach the ultimate consumer. The harvesting foreman, the packing house managers and foremen are "inspectors"—or at least they should be. The buyer at shipping point, in the markets—yes, even the storekeeper who buys one or more packages for sale to his customers are "inspectors." Don't forget the housewife—if you don't think she is an inspector, just watch her do her marketing.

The word "inspector" and its companion word "inspection" naturally brings up the subject of grading and standardization, and particularly the grades as established by the Bureau of Agricultural Economics of the United States Department of Agriculture. It is on the basis of the Federal grades that most of our inspection and certification is done. It might be said at this point that one of the important reasons for the establishment of these U. S. grades was "to provide a common language between buyer and seller on which they could deal with mutual confidence and understanding."

The Food Products Inspection service of the United States Department of Agriculture was authorized in the "Stimulating of Agriculture Bill" which was passed August 10, 1917. It was a war measure and was designed (1) to aid in the quick unloading of cars, when cars were badly needed; (2) to avoid deterioration of food, while disputes between shipper and receiver were being adjusted, and (3) to inform the shipper as to the condition of his products when they reached the markets, thereby enabling him to settle better any financial difference which might arise between him and his receivers. The advantages offered by the service to shippers, carriers, and receivers became so evident that Congress included it in the regular work of the Department of Agriculture, and in 1922 broadened its provisions to include inspection at shipping point on products offered for interstate shipment.

The Inspection Service is primarily a service and is in no sense a police or regulatory body. Upon the request of any financially interested party, the inspector will examine a lot or shipment and make a report upon it. He has no authority as to the disposition of the products so inspected, nor does he have anything to do with the settling of disputes or making adjustments. He simply gives impartial and unbiased information con-

*Abstract.

cerning the quality and condition of the products which he has inspected. Upon this information disputes between interested parties can be settled with fairness to all sides, and the certificate which he issues is official evidence as to the quality and condition of the product at the time of his inspection. This certificate is accepted by all U. S. Courts as prima facie evidence of the facts therein contained.

One of the best ways to judge the value of the inspection service is to consider what use has been made, and is being made, of the service. In 1918 there were 6,069 inspections of fruits and vegetables at receiving points. In 1925 such inspections reached a total of 32,334. The receiving point inspections remained at about the same figure until 1929 when 37,632 carlots were inspected. The maximum of receiving point inspections was reached in 1931 when there were 59,843. From this point on the amount of these inspections has materially declined. In 1938 there were 49,052 receiving point inspections. It is expected that the amount of these inspections in the terminal markets will show a further decline, due perhaps, to better grading and packing at shipping points, and to a better understanding between buyer and seller. I personally think that this better understanding is due, primarily, to the ever increasing use of shipping point inspection for fruits and vegetables. The first year in which this latter type of inspection was available, 1923, there were 72,466 inspections at the point of origin. With the exception of one or two years, there has been a continual rise in the number of these inspections. During 1938 there were 450,065 shipping point inspections.

The first shipping point inspections of fruits and vegetables were made in Maryland in 1925 when 549 carlots were officially certified as to grade. In 1937 there were 2,880 shipping point inspections made in this State divided as follows: Apples, 1,013; strawberries, 339; fresh tomatoes (Green Wraps), 295; potatoes, 685; peaches, 88; and sweet potatoes, 460. Not all of these were carlots, however, some being truck loads. The total value of all farm products under Federal-State inspection in 1938 amounted to almost $2,000,000. Our 1938 figures have not been, as yet, tabulated.

As mentioned before, the food products inspection service is purely voluntary and no one need have his products inspected unless he so desires. The only exception is in the case of apples and pears for export.

I assume that the grading and packing of vegetables in accordance with the U. S. grades is something with which most everyone in this group is familiar. No doubt you all know the amount of defects permitted in the various grades, so there is not much use in going into that phase of "what the inspector sees" at this time. Better, perhaps, would be to bring to your attention some things that are not covered by the grade definitions and rules.

During comparatively recent years the food consumer is using more vegetables in his daily dietary. I am sure that a great many of you can recall when oranges and grapefruit were a luxury. Now they form a

part of the breakfast of a large part of our population. Twenty-five years or so ago, lettuce and tomatoes were known on the table only when they could be obtained from the local market gardener. Now we have them every month in the year—and usually at reasonable prices. I personally can remember when potatoes, with some buried cabbage, turnips, and apples, were the chief part of our fruits and vegetables.

With the production of fruits and vegetables in areas distant from the large consuming centers, coupled with improved and cheap transportation, there has arisen keen competition that is making the marketing of these crops more complex. It is said that the average human being consumes about one ton of food per year, and we know that all people do not consume the same things. There is a wide selection on the part of the consumer based on individual taste and preference. However, this is not fixed, as is evidenced by the ever growing advertising campaigns conducted by large shippers, cooperatives, and, more recently, by several state agencies.

As I see it, one of your chief problems is to get your produce to the markets in as nearly as possible its original condition, and at the least possible cost. The highly perishable nature of many of the vegetables is one of the causes of the serious difficulties which growers and shippers encounter in the marketing of these crops. Care in harvesting and packing, combined with speedy transit and favorable weather, are essential if the best results are to be obtained.

This brings up the subject of "quick freezing." This industry is leaping ahead at tremendous rates. More and more of the smaller stores are adding cooling units in order to handle such products. Whether we like it or not, these "quick frozen" vegetables are going to give the fresh vegetables keen competition. It is something that should not be dismissed lightly, and we should be thinking of ways and means to protect our fresh vegetable markets.

If there is one thing the inspector sees more than any other in the vegetable container, it is evidence of rough or careless handling. Bruising during harvesting and packing operations or during loading may lead to serious loss later. Broken tissues pave the way for the secondary decay infections, about which we hear so much from the terminal markets. Another noticeable thing about certain vegetable packs is the lack of uniformity, both as to quality and as to size. By this I mean the quality and size in the container under examination. Perhaps we should standardize our pack, using accepted grades, and mark them accordingly. In this connection I think we can learn much from our western vegetable growers. Their pack is much more uniform and attractive than our own, and their markings and labeling is also uniform. It seems to me that the two important factors to be considered are appearance and quality of the product that causes the consumer to come back and ask for more. It might be well to remember that it costs just as much to ship a car of decayed sweet potatoes as it does a car of sound stock.

I want to mention one other thing that the inspector sees. That is the label on packages. He knows that in a great many cases labels mean very little. When shippers and growers spend money to develop a good label, it should stand for something. Too many have a couple of labels which are used for their best and second qualities, regardless of how good it is. If conditions are good, the quality under the label is good, but if the growing season does not result in high quality, the pack under each label is reduced in quality. Too often a label means the best or second best that is grown in that particular season, without regard for the seasons to come.

In conclusion I want to point out a serious error in some computations which have been made in an effort to show by an analysis of market prices whether or not grading and standardization pays. Let us say for the sake of argument that the additional cost of grading entirely wipes out the premium for well-graded stock. Shall we stop grading? Is a reputation for a quality product of no value? Shall we cease trying for trade acceptance? Shall we quit endeavoring to obtain larger consumption and greater distribution for our products? It is my personal belief that growers and shippers should safeguard their reputation and the consumer's interest at every turn by strict grading, which means dependable products. Only shippers of good quality will be able to weather the competitive storm. It is true that there are some instances of conspicuous success, right here in Maryland, in the standardization of fruits and vegetables, but we still have something to learn about establishing ourselves in the confidence of the buying public by keeping our culls at home.

REPORTS OF COMMITTEES

The nominating committee consisting of A. Morris Todd, H. J. W. Rayner, and Elmer Koppelman presented the following nominations for the offices of the Association for the year 1939:

President, Egbert Hawkins, Harmans.

Vice-President, James E. Andrews, Hurlock.

Secretary-Treasurer, W. R. Ballard, College Park.

Directors:

H. J. W. Rayner, Salisbury (3 years)
C. C. Philips, Quantico (2 years)
J. Miles Lankford, Pocomoke (1 year).

Director for Farm Bureau: F. Ridgely Todd, Sparrows Point.

Delegate to Farm Bureau: C. E. Hammond, Brooklyn.

Director for Agricultural Corporation: Wm. G. Lynch, Dundalk.

Upon motion, the Secretary was directed to cast the ballot of the Association for the persons nominated. This the Secretary did.

The Auditing Committee, W. N. Eyler and R. T. Merritt examined the

books of the Treasurer and reported that they were in order and showed a balance of $78.13 as of December 31, 1938.

The Resolutions Committee, F. Ridgely Todd, H. J. W. Rayner, and C. E. Hammond, presented the following resolutions which were unanimously adopted.

Be it resolved That each member be urged to carry back to his local vegetable organization the needs of an active, state-wide organization and urge his local to participate fully.

Be it resolved That the Maryland Vegetable Growers Association request the proper authorities of the University to allocate the necessary land on the new farm for vegetable investigation; to ascertain the best adaptable varieties of vegetables for our different market garden areas,

Also that sufficient personnel be made available to bring about the above in a manner that is practical to the grower.

Be it resolved That Maryland State Vegetable Growers Association have a representative appointed by the President at the regular meetings of the Northeastern Vegetable and Potato Council; that the expenses be borne by the Association and supplemented by the Farm Bureau Federation (when necessary).

Be it resolved That a vote of gratitude be extended to the parties who have contributed to our regular meeting today.

President Hawkins appointed F. Ridgely Todd to represent the Association at meetings of the Northeastern Vegetable and Potato Council, with C. E. Hammond and H. J. W. Rayner as alternates.

PRIZE WINNERS AT STATE POTATO AND VEGETABLE SHOW

Lord Baltimore Hotel

Baltimore, Md.—January 11 and 12, 1939

Class I—Adult Certified Irish Cobbler

First Place—Foster Yost, Accident, Md.—Garrett County.
Second Place—William F. DeBerry, Oakland, Md.—Garrett County.

Class II—Adult Certified Smooth Rural

First Place—Foster Yost, Accident, Md.—Garrett County.
Second Place—Albert Richter, Accident, Md.—Garrett County.
Third Place—William F. DeBerry, Oakland, Md.—Garrett County.

Class III—Adult Certified Russet Rural

First Place—James E. George, Grantsville, Md.—Garrett County.
Second Place—Walter C. DeBerry, Oakland, Md.—Garrett County.
Third Place—William F. DeBerry, Oakland, Md.—Garrett County.

Class IV—Adult Certified Dakota Red

First Place — William Cissel Simpson, Clarksville, Md. — Howard County.
Second Place—Evan Chaney, Laurel, Md.—Prince Georges County.

Third Place—George Buckingham, Marriottsville, Md.—Howard County.
Fourth Place—John R. Jehle, Hyattsville, Md.—Prince Georges County.

Class V—Adult Certified Any Other Variety

First Place—William F. DeBerry, Oakland, Md.—Garrett County (Chippewa).
Second Place—Troy Fike, Fearer, Md.—Garrett County (Katahdin).
Third Place—Evan Chaney, Laurel, Md.—Prince Georges County (Houma).

Class VI—Adult Certified Sweet Potatoes

First Place—J. Willard Toadvine, Salisbury, Md.—Wicomico County—Maryland Golden.
Second Place—Robert T. Williams, Salisbury, Md.—Wicomico County—Maryland Golden.
Third Place—Carl H. Smith, Jr., Salisbury, Md.—Wicomico County—Maryland Golden.
Fourth Place—Rayner Brothers, Salisbury, Md.—Wicomico County—Maryland Golden Red.
Fifth Place—Carl H. Smith, Jr., Salisbury, Md.—Wicomico County—Maryland Golden.

Class VII—Adult Commercial Irish Cobbler

First Place—Robert DeBerry, Oakland, Md.—Garrett County.
Second Place—Foster Yost, Accident, Md.—Garrett County.
Third Place—William F. DeBerry, Oakland, Md.—Garrett County.
Fourth Place—Richard DeBerry, Oakland, Md.—Garrett County.
Fifth Place—William F. DeBerry, Oakland, Md.—Garrett County.
Sixth Place—John R. Jehle, Hyattsville, Md.—Prince Georges County.
Seventh Place—R. W. Burtner, Sharpsburg, Md.—Washington County.
Eighth Place—Leroy Burtner, Sharpsburg, Md.—Washington County.
Ninth Place—O. W. Burtner, Sharpsburg, Md.—Washington County.
Tenth Place—Howard Burtner, Keedysville, Md.—Washington County.

Class VIII—Adult Commercial Smooth Rural

First Place—William F. DeBerry, Oakland, Md.—Garrett County.
Second Place—Robert DeBerry, Oakland, Md.—Garrett County.
Third Place—Howard Schlosnagle, Accident, Md.—Garrett County.
Fourth Place—Foster Yost, Accident, Md.—Garrett County.
Fifth Place—Richard DeBerry, Oakland, Md.—Garrett County.
Sixth Place—William F. DeBerry, Oakland Md.—Garrett County.
Seventh Place—Bobbie Miller, Accident, Md.—Garrett County.
Eighth Place—Eugene Schlosnagle, Accident, Md.—Garrett County.
Ninth Place—Mrs. W. A. Custer, Friendsville, Md.—Garrett County.
Tenth Place—Lloyd Miller, Accident, Md.—Garrett County.
Eleventh Place—Raymond Schlosnagle, Accident, Md.—Garrett County.
Twelfth Place—W. A. Custer, Friendsville, Md.—Garrett County.
Thirteenth Place—R. W. Burtner, Sharpsburg, Md.—Washington County.

Class IX—Adult Commercial Russet Rural

First Place—W. F. DeBerry, Oakland, Md.—Garrett County.
Second Place—Ray W. George, Grantsville, Md.—Garrett County.
Third Place—John R. Jehle, Hyattsville, Md.—Prince Georges County.
Fourth Place—M. C. DeBerry, Oakland, Md.—Garrett County.
Fifth Place—Orval Thomas, Selbysport, Md.—Garrett County.
Sixth Place—Richard DeBerry, Oakland, Md.—Garrett County.
Seventh Place—Robert DeBerry, Oakland, Md.—Garrett County.
Eighth Place—W. C. DeBerry, Oakland, Md.—Garrett County.
Ninth Place—William F. DeBerry, Oakland, Md.—Garrett County.

Class X—Adult Commercial Dakota Red

First Place—Mrs. William Cissel Simpson, Clarksville, Md.—Howard County.
Second Place—William Cissell Simpson, Clarksville, Md.—Howard County.
Third Place—John R. Jehle, Hyattsville, Md.—Prince Georges County.
Fourth Place—Howard Burtner, Keedysville, Md.—Washington County.
Fifth Place—Evan Chaney, Laurel, Md.—Prince Georges County.
Sixth Place—George Buckingham, Marriottsville, Md.—Howard County.

Class XI—Adult Commercial Any Other Variety

First Place—William Cissel Simpson, Clarksville, Md.—Howard County (Up-to-Date).
Second Place—Mrs. William P. DeBerry, Oakland, Md.—Garrett County (Golden).
Third Place—William P. DeBerry, Oakland, Md.—Garrett County (Chippewa).
Fourth Place—Mrs. William Cissel Simpson, Clarksville, Md.—Howard County (Up-to-Date).
Fifth Place—W. F. DeBerry, Oakland, Md.—Garrett County (Earlaine).
Sixth Place—George H. Buckingham, Jr., Marriottsville, Md.—Howard County (Warba).
Seventh Place—George H. Buckingham, Marriottsville, Md.—Howard County (Earlaine).
Eighth Place—Howard Burtner, Keedysville, Md.—Washington County (Early Rose).
Ninth Place—Edwin Burtner—Keedysville, Md.—Washington County (Early Rose).
Tenth Place—John R. Jehle, Hyattsville, Md.—Prince Georges County (Golden).
Eleventh Place—O. W. Burtner, Sharpsburg, Md.—Washington County (Bliss Triumph).
Twelfth Place—R. W. Burtner, Sharpsburg, Md.—Washington County (Bliss Triumph).

Class XI-A—Adult Commercial Katahdin

First Place—Robert DeBerry, Oakland, Md.—Garrett County.
Second Place—Richard DeBerry, Oakland, Md.—Garrett County.
Third Place—J. Gordon Callis, Accident, Md.—Garrett County.

Class XII—Adult Commercial Sweet Potatoes, Maryland Golden Sweet

First Place—T. S. Hearn, Salisbury, Md.—Wicomico County.
Second Place—Carl H. Smith, Salisbury, Md.—Wicomico County.
Third Place—Robert T. Williams, Salisbury, Md.—Wicomico County.
Fourth Place—Carl H. Smith, Jr., Salisbury, Md.—Wicomico County.
Fifth Place—Rayner Brothers, Salisbury, Md.—Wicomico County.

Class XIII—Adult Commercial Sweet Potatoes, Any Other Variety

First Place—Rayner Brothers, Salisbury, Md.—Wicomico County (Maryland Golden Red).
Second Place—J. Willard Toadvine, Salisbury, Md.—Wicomico County (Goldskin).
Third Place—Carl H. Smith, Salisbury, Md.—Wicomico County (Southern Queen).
Fourth Place—Carl H. Smith, Jr., Salisbury, Md.—Wicomico County (Maryland Golden).
Fifth Place—Robert T. Williams, Salisbury, Md.—Wicomico County (Porto Rico).

Class XIV—4-H Club Certified and Commercial Early Varieties

First Place—Roger Burtner, Keedysville, Md.—Washington County (Irish Cobbler).
Second Place—John R. Jehle, Hyattsville, Md.—Prince Georges County (Warba).
Third Place—Edwin Burtner, Keedysville, Md.—Washington County (Irish Cobbler).
Fourth Place—Bish Martin, Westminster, Md.—Carroll County (Irish Cobbler).
Fifth Place—William Hines, Jr., Brinklow, Md.—Montgomery County (Irish Cobbler).
Sixth Place—Morris H. Martin, Westminster, Md.—Carroll County (Irish Cobbler).
Seventh Place—George Samuel Burtner, Boonsboro, Md.—Washington County (Bliss Triumph).

Class XV—4-H Club Certified and Commercial Medium Late Varieties

First Place—Clark Crawford, Keedysville, Md.—Washington County (Blue Victor).
Second Place—John R. Jehle, Hyattsville, Md.—Prince Georges County (Chippewa).
Third Place—Edwin Burtner, Keedysville, Md.—Washington County (Blue Peerless).
Fourth Place—Roger Burtner, Keedysville, Md.—Washington County (Katahdin).

Class XVI—4-H Club Certified and Commercial Late Varieties

First Place—John R. Jehle, Hyattsville, Md.—Prince Georges County (Netted Gem).

Second Place—Wilbur Thomas, Selbysport, Md.—Garrett County (Russet Rural).

Third Place—George Samuel Burtner, Boonsboro, Md.—Washington County(Dakota Red).

Fourth Place—Edwin Burtner, Keedysville, Md.—Washington County (Dakota Red).

Fifth Place—Roger Burtner, Keedysville, Md.—Washington County (Dakota Red).

Class XVI-A—4-H Club Certified and Commercial Smooth Rural

First Place—Charles Herring, Accident, Md.—Garrett County.

Second Place—Junior Schlosnagle, Accident, Md.—Garrett County.

Third Place—Eugene Schlosnagle, Accident, Md.—Garrett County.

Fourth Place—Glenn Schlosnagle, Accident, Md.—Garrett County.

Fifth Place—John R. Jehle, Hyattsville, Md.—Prince Georges County.

Sixth Place—Leslie Guard, Somerfield, Pa. (P. O.)—Garrett County.

Seventh Place—Bobbie Miller, Accident, Md.—Garrett County.

Eighth Place—Paul Miller, Accident, Md.—Garrett County.

Ninth Place—Marvin Schlosnagle, Accident, Md.—Garrett County.

Tenth Place—Clark Crawford, Keedysville, Md.—Washington County.

Class XVII—F. F. A. Certified and Commercial

First Place—Clifton C. Link, Jr., Ednor, Md.—Montgomery County (Dakota Red).

Second Place—Junior Schlosnagle, Accident, Md.—Garrett County (Mason).

Third Place—Wilbur Thomas, Selbysport, Md.—Garrett County (Russet Rural).

Fourth Place—James E. George, Grantsville, Md.—Garrett County (Russet Rural).

VEGETABLE CLASSES

Class I—Cabbage

First Place—William Cissel Simpson, Clarksville, Md.—Howard County.

Class II—White Onions

First Place—R. W. Burtner, Sharpsburg, Md.—Washington County.

Second Place—O. W. Burtner, Sharpsburg, Md.—Washington County.

Class III—Carrots

First Place—Elmer Koppelman, Raspeburg, Md.—Baltimore County.

Class IV—Beets

First Place—Elmer Koppelman, Raspeburg, Md.—Baltimore County.

Class V—Parsnips

First Place—Elmer Koppelman, Raspeburg, Md.—Baltimore County.

Class VI—Turnips

First Place—Elmer Koppelman, Raspeburg, Md.—Baltimore County.
Second Place—Clark Crawford, Keedysville, Md.—Washington County.
Third Place—Matthew Harding, Rt. 1, Cambridge, Md.—Dorchester County.

Class VII—Salsify

First Place—Elmer Koppelman, Raspeburg, Md.—Baltimore County.

TOTAL NUMBER OF EXHIBITS

White Potatoes—Regular Exhibits	100
White Potatoes—Seeding Exhibits	10
Sweet Potatoes—Regular Exhibits	17
Vegetables	13
Total Exhibits	140

CONSTITUTION
of the
MARYLAND VEGETABLE GROWERS' ASSOCIATION

ARTICE I.—*Name*

The name of this organization shall be the Maryland Vegetable Growers' Association.

ARTICLE II.—*Object*

The object of this organization shall be to develop the trucking and market gardening industry of the State, to disseminate new and valuable information relating thereto, to encourage the exhibition of vegetable products, and to cooperate with all other agricultural interests and agencies in promoting the welfare of the State.

ARTICLE III.—*Officers*

The officers of this Association shall consist of a President, a Vice-President, and a Secretary-Treasurer, who shall be elected by ballot at the annual meeting of the Association, and their term of office shall begin on the first day of January following their election.

ARTICLE IV.—*Executive Board*

Section 1. The Executive Board shall be the governing body of this Association.

Section 2. The Executive Board shall consist of the President, Vice-President, the Secretary-Treasurer, three members at large elected by the Association and one director from each of the affiliated organizations.

At the Annual Meeting in January, 1939, one of the three members at large shall be elected to serve one year, one to serve two years, and one to serve three years. Thereafter, such members at large are to be elected for a term of three years.

ARTICLE V.—*Membership*

Section 1. Any person interested in the growing of vegetables in this State may become a member of this Association by making an application to the Secretary-Treasurer and by the payment of $1.00 annual dues, payable in advance.

Section 2. Any local or district vegetable growers organization in the State may obtain membership as a collective group when ten or more members pay an annual fee of fifty cents per member. Such affiliated organization shall be entitled to one director who shall become, ex-officio, a member of the Executive Board.

ARTICLE VI.—*Meetings*

Section 1. The annual meeting of this Association shall be held in Baltimore during Maryland Week or at such time and place as the Executive Board may direct.

Section 2. Special meetings of the Association may be called from time to time by the Executive Board.

ARTICLE VII.—*Committees*

Section 1. The following standing committees consisting of three members each shall be elected annually by the Executive Board: Investigation, Legislation, Marketing, Transportation, Maryland Week, and other Exhibitions.

Section 2. Special committees may be appointed from time to time as the Executive Board or the Association may direct.

Section 3. Three members appointed annually by the Executive Board and one member from each of the affiliated organizations shall constitute a Membership Committee. The Secretary shall be chairman of this Committee.

ARTICLE VIII.—*Amendments*

Section 1. This Constitution may be amended by a majority of members present at any annual meeting of the Association provided that a written notice of the proposed amendment shall have been given to the Secretary-Treasurer of this Association at least thirty days prior to the meeting at which the amendment is to be voted upon.

BY-LAWS

Section 1. The duties of the officers shall be such as usually pertain to their respective offices in addition to such other duties as may be hereinafter provided.

Section 2. In case of vacancy in any office, the Executive Board may fill the same until the next annual meeting.

Section 3. The Secretary-Treasurer shall issue notices of all meetings at least ten days in advance of the date of the meeting.

Section 4. All accounts of the Association shall be audited at or before the Annual Meeting by an Auditing committee appointed by the President and a statement of the report shall be submitted to the Association.

Section 5. The Secretary-Treasurer shall be the executive officer for the Executive Board in participating in exhibitions, fairs, etc., and, under the direction of the Executive Board, he may appoint such assistants as may be necessary.

Section 6. Proceedings of the annual meetings of the Association may be published in the discretion of the Executive Board. The Secretary-Treasurer shall in such case prepare a report for publication.

Section 7. The Executive Board may make such rules and regulations for the government of the Association as may be necessary for the transaction of business; provided that such rules and regulations are not in conflict with the Constitution.

Section 8. Each member shall be entitled to a copy of the published reports of the Society.

Regular Order of Business

REPORT

OF THE

Maryland Stockmen's Association

TENTH ANNUAL MEETING

January 12, 1939

Baltimore, Maryland

Mr. George K. Bailey, Acting President, opened the Tenth Annual Meeting of the Maryland Stockmen's Association in the Lord Baltimore Hotel, Baltimore, Maryland.

ACTING PRESIDENT'S ADDRESS

GEORGE K. BAILEY

I am just going to give a few brief remarks about the year 1938. In a way, it has been very sad for us in that we lost our President, Mr. S. O. Jones. He was not only ever-cheerful and helpful to all stockmen, but to all with whom he came in contact. He was a distinguished breeder of Hampshire sheep and a very progressive agriculturist in general, always willing to impart to his people any information he had. His absence from the Association has been felt keenly by all of us, and it is with extreme regret that I am in this chair today.

Livestock prices were not spectacular in either direction, on the whole, but maintained a level high enough to let the economical outfit get by with some profit.

The year 1938 was a moderately favorable one for Maryland stockmen. Our State Shows, I think, showed considerable improvement in the quality of their exhibits, especially at Timonium. A great deal of interest was manifest in the Horse Pulling Contests this year. The Baltimore Livestock Show was very well attended by our stockmen, and I think of special mention here would be the 4-H Club exhibits. These exhibits have improved each year, and I hope will continue to do so until we have finally reached the high standard for which we are all striving.

Another interesting thing during the year 1938 was the fact that three Marylanders took exhibits to the International Livestock Show held at Chicago; Charles Rieman took Suffolk Punches; H. H. Hackney, Aberdeen-Angus; B. S. Oles, Herefords. These three stockmen, while they did not bring home the blues, made what we consider a very favorable showing in what is termed the strongest competition in the world, and I hope that we can get other Marylanders to fly our flag.

Another fine thing was the record that our Maryland 4-H Livestock Judging Team made at the International. It took sixth place out of twenty-three, and was beaten by only one state east of the Mississippi. The boys deserve great credit, as do their coaches, Mr. Wheeler Ensor, Assistant County Agent of Baltimore County, and Mr. J. B. Outhouse, Instructor and Assistant at the University.

I think one man deserves, as usual, special mention for his work in the interests of Maryland livestockmen during the year. That man is Mr. W. R. Harvey. He is not only Manager of the Baltimore Livestock Show, and a member of nearly every association and committee working for the livestock interests, but also steps in whenever necessary and works on his own hook. He is our general counselor and is always willing to cooperate one hundred per cent.

One disappointing thing during the year 1938 is the small membership of our Association. We would like to urge each and every stockman in the State, whether a large or small breeder, to become a member of the Association. We need everyone's shoulder to the wheel in order to continue our present progress. Let's all send our dues in immediately so that when 1939 draws to a close we will have the largest membership in the history of the Association.

I wish to appoint, at this time, unless there is objection from the floor, a nominating committee so that we may be able to pass on their report before the morning session is over. I would like to appoint five on this committee: W. R. Harvey, Chairman; J. E. Muncaster, Osborne Stabler, K. A. Clark and W. Alan McGregor.

Our first speaker on the program this morning is Mr. B. S. Oles, who will tell us something about "Maryland and Its Beef Breeding Possibilities."

MARYLAND AND ITS BEEF BREEDING POSSIBILITIES

B. S. OLES, Kingsville, Maryland

I have several ideas insofar as beef cattle are concerned, but would like to repeat a portion of an article I read recently on the possibilities of beef cattle in the east and to which I have added several comments.

It has been said that the two greatest factors limiting beef production in the east are feed and buildings; just how real are these two limiting factors?

It is extremely doubtful if buildings may be safely considered a necessity to beef cattle raising, at least as the word buildings is usually understood. The Grand Champion steer over all breeds at the American Royal in 1937 was never kept in a barn; the only shelter used was four stakes and a roof of cornstalks, and I must say he was one of the finest Hereford steers one would want to see. If this sort of protection in the west is sufficient to protect grand champions, I don't think we, here in Maryland, with our mild weather, need worry too much about elaborate buildings.

Winter Feeding—the types of feed necessary for this line of animal husbandry are all too well understood and objections on this score arise either from a lack of understanding or a willful attempt to confuse the issue. Let us consider some of the things that are necessary.

No longer does exact location of farm really count, for trucking has gone far to overcome distance from railroads. A farm capable of producing only reasonable pasture and roughage, a farm well watered and equipped with a good shed and perhaps a silo, is the basic thing which will determine location. If one chooses to feed out his own steers—but under this condition only—the farm selected must be capable of producing corn, barley or oats. Then, such a farm properly fertilized with some of the valuable steer manure, can be trusted to produce good legumes and mixed hay as well.

There are definite records on a herd of beef cattle in central New York which asks, and usually receives, a gross income of $100 a year per cow, and everything necessary must come from the farm. Think of this—here is a farmer whose beef cattle herd cost him almost nothing but an occasional visit with a pail of salt from May 15 to October 15. In Maryland, with our climate, we would have at least two or three months longer. Think of the amount of time this farmer can give to his other agricultural activities; also the amount of roughage produced as a sideline in producing certified seed, barley, cabbage and beans, and the amount of valuable manure made from these roughages, which is not only used in producing these crops, but also in such things as fruit growing. My suggestion is that needless spending for feed and building be avoided.

If the consumer markets are ready to accept good eastern beef and they certainly appear to be ready, if it is possible to produce the feed as I have indicated, and if, in addition, we are able to engage in a type of agriculture which does not add to the difficulties of another practice, but makes for a more permanent type of agriculture, I think now is a splendid time to consider its possibilities.

For the benefit of those, who for some reason may hesitate to make the change, I would like to add that it is no longer a sure sign of mental inferiority to be engaged in the production of beef cattle in the east, and in my opinion, there is no better place than right here in our own State of Maryland.

In order to round out our program in introducing beef cattle once more in our State, I feel that the Maryland breeders should encourage the breeding of good steer calves, selling same to 4-H Club members, who in turn could feed, show, and sell at the Baltimore Livestock Show. This program could be handled by our committee and encouragement given to these boys and girls whenever it is most urgent.

MR. BAILEY: Our next speaker is Professor Fred H. Leinbach of the University of Maryland. Professor Leinbach will give us some idea of the part that the University is to play in our beef production.

THE UNIVERSITY'S PART IN MARYLAND'S BEEF CATTLE PROGRAM

FRED H. LEINBACH, College Park

In 1936 every man, woman and child in the United States consumed on an average, 58.3 pounds of dressed beef and 8.4 pounds of dressed veal. To have produced its own quota, Maryland would have had to market from its farms 105 million pounds of beef (104,940,000 pounds based on an average consumption and an estimated population of 1,800,000) and 15,000,000 pounds of veal (15,120,000). To fill our quota required 205,000 steers weighing 850 pounds on foot and yielding 60 per cent of their weight as dressed meat and better than 205,000 veals weighing 135 pounds on foot and yielding 55 per cent of their weight as dressed meats. We actually shipped to market that year just a trifle more than one-fourth enough cattle and one-half enough veals to feed ourselves. If we could analyze these figures still more, I am quite certain we would find that discarded and worn out dairy stock comprised a considerable portion of the beef marketed.

Going one step further, I find that of the 56,000 head of cattle we marketed or slaughtered on Maryland farms in 1936, 21,000 head or almost 38 per cent were classified as in shipments or were cattle that originated outside the state.

With about 16,000 head of beef cattle of all ages in the State and confronted with the above information, it is readily seen that we have no overproduction problem on our hands at present and that we are not apt to have for many years to come.

It seems to me that our greatest need at the present time is increased commercial cattle production. As we increase this we provide a better market for the surplus cattle from our purebred herds. It is well to remember that the very top purebreds in our herds today will have grandsons or great grandsons in the commercial herds a few years hence. As long as we cannot supply our own beef needs we shall continue to enjoy good markets for the price we receive, for a certain grade of steer that we sell will be based on the worth of that steer on the nearest market which has a surplus of that grade plus the freight charges which will bring them to our markets. Why, then, do we not have more beef cattle in Maryland? Is it because we cannot produce the feeds on our farms? I am told that our average corn yield compares favorably with that of the cornbelt states—we can and do have better permanent pastures than that part of the cornbelt with which I am best acquainted, namely northern Iowa. We can grow a good yield of hay in our meadows when they are properly managed and our tonnage yield from an acre of silage corn is higher than many of the cornbelt states. No, I doubt if this is our problem. Then, is it because our land values are too high? I doubt that, for successful cattle production is being conducted on farms equally as valuable as most of our Maryland

farms. Perhaps our production costs are too high, you say. Personally, I believe that is the answer to our question—let us see whether or not this is true.

Most of the cattle we market as fat are two-year-olds and older. The most efficient and the fastest relative gains are put on by the younger cattle. According to Professor Morrison's data reported in "Feeds and Feeding" it requires only 69 per cent as much grain, 81 per cent as much hay and 61 per cent as much silage, with only a slightly greater amount of protein supplement to put 100 pounds of gain on a calf in the feed lot as it does a two-year-old steer; a yearling steer also makes his gains more efficiently than the former, requiring 88 per cent as much grain, 98 per cent as much hay and 84 per cent as much corn silage, with only a slight increase in the amount of protein supplement for each 100 pounds of gain. Our markets call for older cattle, but I am convinced that an educational program, well thought out and carried to our people by our livestock interests, could in time remove any prejudices that may exist against beef from younger cattle. There will probably always be a limited amount of demand for heavy fed steers, but the trend throughout the nation is to the lighter weights. The average feeder, because of the greater efficiency in putting on gains, is safer feeding the younger steers if he has the market facilities for them. Again, I believe that we need an educational program, in this part of the east, training our public to demand a better grade of beef than they are now getting in our markets. I am convinced that our people would eat more beef if they didn't get an inferior product so often. One tough steak may spoil several future sales. People can be taught that there is a difference in meat, that all steaks are not alike, some roasts are more tender than others, and our producers of commercial cattle will benefit when they are.

Another method of cutting the production costs is by cheapening the cost of our fattening rations. We need more information on the worth of feeds that we have available. With this in mind, an experiment has been set up this year at College Park consisting of 4 lots of cattle, which when completed, should furnish considerable information on the value of distillers' by-product feeds. Our check lot receives corn, cottonseed meal, corn silage and hay—a satisfactory and economical ration for a corn-producing state. Lot 2 receives just a trifle over ½ as much corn as lot 1 and in addition dried distillers' rye grains. Lot 3 receives a combination grain ration composed of dried distillers' rye grains, corn and cane molasses, while in lot 4 a part of the dry matter and nutrients furnished by corn is being replaced by distillers' slop. The cattle are yearlings and have been on feed just over one month, making satisfactory gains having averaged better than 2½ pounds gain per day for the first 28-day period. This and like experiments which are to follow are one means by which it is hoped the University of Maryland can render assistance to our beef producers.

We need to know more about our markets. When we buy or sell on the livestock market, do we know whether we have bought well or sold at the right time? If we can adjust our operations to insure more favorable market breaks we have made for ourselves a more favorable market. We are endeavoring to teach our animal husbandry students more about market conditions, believing that for successful cattle operations it is as essential to know the conditions of the markets themselves as it is to know how to feed correctly and economically. Mr. Vial has recently been conducting steer feeding meetings in various sections in which emphasis has been placed not only on the value of the various feeds available, but where representatives of the stock yard agencies have given much valuable information regarding market conditions. I believe that this sort of an educational program is very worthwhile and that another year there will be an increased call for similar feeding schools.

We need to know how the cost of producing calves in our breeding herds can be reduced. Our livestock sanitation personnel, under the direction of Dr. Mark Welsh, is greatly aiding our producers by waging constant warfare against outbreaks of contagious diseases in our livestock. The commercial breeder who attains a percentage calf crop of 90 per cent or above certainly has reduced the overhead on his calves at birth as compared to that of the man who gets but 80 per cent calf crop. Control of disease helps make averages like the first possible. We need more information on how to reduce the wintering costs on our cow herd and it is hoped that at the University we will soon be in a position to conduct experiments designed to accomplish this purpose.

With the soil conservation program in effect, many acres of land formerly used for the production of grain will be seeded to hay or other forage crops. It would seem that this will be the stimulus needed to increase our beef production to a considerable extent. Now is the time when beef men should be on the job advocating more commercial herds of cattle in Maryland.

Last, but not least, is our obligation to our purebred breeders. Our University herds should be maintained at the highest levels possible. We need to acquaint our students not only with sound production methods but with good livestock as well; they are the agricultural leaders of the State in the near future and they will do much to shape our agricultural destiny a few years hence. Good herds will moreover reflect favorably on our breeders. I, personally, know of no better advertisement for the purebred breeders of the State than to have the State University make creditable steer show winnings in the better fat stock shows. That involves cooperation between the college and the breeders, for it is only in rare instances that a college herd can be maintained at a sufficient size to furnish all the necessary steer prospects needed to make a show herd.

In conclusion, we would like you to feel that your problems are our problems; our aim is to serve you to the best of our ability.

MR. BAILEY: At this point I think we should have the report of the nominating committee. Chairman Harvey gave the following report:

President: George K. Bailey, Earleville.
Vice-Pres.: Ed. Derr, Walkersville.
Sec'y-Treas.: Jos. M. Vial, College Park.
Ass't. Sec'y-Treas.: Alan Bogue, Baltimore.
Executive Committee: B. A. Rucker,, Mechanicsville.
B. S. Oles, Kingsville.
James Clark, Ellicott City.
Sterling Little, Westminster.
H. H. Hackney, Finksburg.
Delegate to Farm Bureau Federation: J. Herbert Snyder, Union Bridge.
Delegate to Annual Meeting: Wm. J. Hines, Brinklow.

Mr. Bogue withdrew his nomination and nominated J. B. Outhouse for Ass't Secretary-Treasurer. After considerable discussion from the floor, the matter was referred back to the nominating committee. The report stood as it was originally, with Mr. J. B. Outhouse as Corresponding Secretary. Motion was made, seconded, and unanimously carried that above officers be elected for the year 1939.

MR. BAILEY: I would like to appoint the following Membership Drive Committee and we will then have the report of the Secretary-Treasurer.

M. C. Sherman, Queenstown.
B. A. Rucker, Mechanicsville
J. B. Outhouse, College Park.
Robert B. Rench, Hagerstown.

REPORT OF SECRETARY-TREASURER

JOSEPH M. VIAL

We have in the treasury, as of this date, a balance of $17.65. Ten News Letters have been issued during the past year. In this connection, I would like to stress the value to everyone associated with the organization, to take the time and effort to forward to the Secretary timely news items with respect to their individual herds, flocks, or studs, or pertaining to livestock developments in their community. Another place where the Stockmen's News Letter can be and has been of value to those who have utilized this medium of service, is the "For Sale," and "Wanted" items. We have had a number of instances whereby the buyer and seller have been brought together as a result of these monthly items published in the News Letter.

We held two tours during the year. The first tour was held on May 24, when we visited a number of Carroll County farms, as reported in our News Letter for May. The second tour was on the Eastern Shore, held October 21. This tour was not quite as largely attended, owing to the heavily congested schedule of prominent livestock dates during

that month. However, those who were privileged to attend spent a delightful day.

I regret to report that our membership is not up to par. There are only 95 paid-up members for the year, and I recommend to the officers of the Association that some sincere effort be made this year to increase our membership. I feel, personally, that surely in a state such as this, with an ever-growing interest in livestock, a membership of 500 is not too much to expect. Nor do I feel that the officers of this Association should be content until that goal has been reached or surpassed.

MR. BAILEY: You have heard the Secretary's report. What is your pleasure? It was moved and seconded that the report be accepted as read and motion duly carried.

MR. BAILEY: Mr. Alan E. Bogue of the Baltimore Union Stock Yards Company will give us some information on western lamb feeding projects.

DEVELOPMENT OF WESTERN LAMB FEEDING PROJECTS

ALAN E. BOGUE, Baltimore

Considerable discussion has ensued regarding western lamb feeding during the past few annual meetings of this Association, and today I am going to relate some of the latest findings and tell you of the western lamb project in which 20 club boys of this State are enrolled.

There is no doubt but what the Maryland farmer is favorably located for feeding out western lambs. He has the advantage of being in a lamb consuming area, for two-thirds of the lamb is consumed east of the Mississippi River and the major portion of this amount between Washington and Boston. During the winter lamb marketing season he is especially well located because the Baltimore market is relatively high during that period in comparison to other markets. Baltimore is about the farthest point from production and the nearest to consumption during the winter months, and as many as 30,000 lambs are brought into the Baltimore market each year from the cornbelt to supply the packers in this area with their winter lamb kill.

In general, we have the same available feeds in this State as will be found in the large lamb feeding sections. Corn and alfalfa or clover hay seem to compose the standard ration used throughout the lamb feeding territory with the exception of lambs fed in sugar beet areas where the by-products of that industry are used. Your price of feeds in Maryland will be somewhat higher, yet your marketing advantages will offset that factor. Barley is a fair feed for fattening lambs, and wheat can replace a portion of the corn, while soybean hay can be used instead of alfalfa or clover.

The average lamb obtained from the west for feeding purposes should weigh about 60 pounds and should be secured in early fall when the bulk of feeder lambs is changing hands. Sixty-pound lambs are large enough so that they can stand the ship and have the advantage of going

on to the market at a more desirable weight. It is advisable to get lambs with some mutton type breeding, rather than regular fine wool westerns because those that have mutton type breeding are smoother skinned and have a more desirable body conformation. Heavy hided lambs have a lower dressing per cent and unless wool is high priced the fine wooled, wrinkly lambs will be discounted. Western lambs are recommended rather than native lambs because they are freer from internal parasites, and due to this condition, will make better gains with less death loss in the feed lot.

You can figure that it will take about a 110-day feeding period to fatten a 60-pound lamb, and that is allowing time for getting the lambs on feed. Lambs, under good care, should gain from ¼ to ⅓ of a pound a day after getting on full feed and with this gain will weigh around 85 pounds at marketing time. Lamb feeders figure that it takes about 2½ bushels of corn, or its equivalent, and about 140 pounds of alfalfa hay or its equivalent to fatten a 60-pound lamb. Some protein supplement can be added at the rate of 1 pound of protein supplement to 7 pounds of grain for the first 30 days of the feeding period to make a more desirable finish; however, if good legume hay is being fed the protein supplement is not necessary. A death loss of about 3 per cent can reasonably be expected during the feeding period. Lambs cannot handle excessive amounts of concentrate feed and overeating is one of the major causes of death loss. Some death loss could be avoided by marketing the lambs as they were finished and not waiting until all were ready to go and this scheme would work out well, especially when one has the advantage of being so near to a livestock market.

It is not necessary to construct expensive housing facilities for feeding lambs; a small dry lot with shelter from wet rains will serve the purpose.

A double deck carload of western lambs was purchased in the Black Hills region of South Dakota and delivered here the second day of November for the 4-H Western Lamb Feeding Project, which is a new project this year. These lambs weighed 64 pounds at shipping point and were especially sorted so as to secure uniform lambs. They were distributed to 20 club boys in lots of 15 and will be fed until February 21, when a show and sale will be held at the Stock Yards. These lambs cost the boys $8.25 per cwt. delivered to their feed lots and the lambs would classify as good lambs. The death loss on these lambs has been light so far and we hope this success continues until February 21. These lambs are being fed by boys in Carroll, Howard, Montgomery, Washington, and Harford Counties, with the bulk of them in Howard and Carroll. Plans are being made to have a Lamb Feeders' Tour on February 10, when we will visit a number of the boys and get the inside story on how they have fed the lambs and how they have responded to their care. I want to especially urge all of you to jot down the dates of February 10 and February 21 and plan to be present. Mr. Vial and Mr. Downey will be more than pleased to furnish you information on these events.

When this project is completed, a report will be published showing the gain, cost of gain, and profit and loss on each boy's lambs. This report will be based on market prices to make it as comparable as possible to the conditions of the average feeder. This appears to be a good year in the lamb feeding business and perhaps next year will erase some of the profits being made now. However, one must figure on staying in the game during a series of years or else he might be "zigging" along, as the old story goes, when he should have been "zagging."

MR. BAILEY: Our next speaker this morning is Mr. B. A. Rucker, Manager, Cremona Farm, Mechanicsville.

CARE AND HANDLING OF THE BREEDING FLOCK

B. A. RUCKER, Mechanicsville

Sheep were first domesticated in Asia, although they were known quite a while before. From Asia they were sent to Spain and from there to England, France, and then the United States. The first sheep were raised mainly for wool. Mutton sheep didn't come into prominence until about 1850. They were first developed in England and went from there to other countries.

Here in Maryland we are mainly interested in the mutton breeds. The wool is a minor part of our sheep business, although we shouldn't forget it entirely. I believe we all try to shear enough wool to pay for the feed and rent of the pasture of the flock during the year. Sheep on most of the farms in Maryland are run as a side line to some other major unit. Few of us realize that sheep have held up better than any commodity the farmer has produced since the World War.

Along about this time and a little earlier is the most important time of the year with sheep. Beginning around the first of August we start thinking about the breeding season, which should begin about the first of September. That is, the rams should be turned with the flock on September 1. During the month of August ewes should have plenty of pasture and from ½ to ¾ pounds of grain per head per day. Ewes should be kept gaining from August until they lamb. They should gain around 25 pounds during this time. A good ration is equal parts corn, oats, and bran. If nothing more is available, good oats are preferable. The rams should also be fed about 1 pound per head per day to condition them for the breeding season.

Just before turning the rams with the ewes, the ewes should be tagged and the ram's belly sheared. The rams are usually kept with the ewes until they begin lambing or until you are sure all of the ewes are bred.

After the ewes begin lambing the grain ration should be increased to 1½ pounds per day and they also should get around 3 pounds of good legume hay per head. If alfalfa is not available, good, clean, bright lespedeza is about the next best.

It is always wise to have some lambing pens around during lambing time. These are mainly to keep the ewe that is lambing away from

the flock and they are also a great help in lessening the number of unclaimed lambs. Ewes should be examined for milk as soon as they lamb and the lambs made to nurse. If this is done, there will usually be little trouble with unclaimed lambs.

Sheep are something that can't be left alone and forgotten. When the lambs start coming, that is the time when you must pay careful attention to the ewes. Time spent with the ewes when lambing is time well spent and might mean the difference between a profit and a loss for the year.

Creeps should be built for the lambs as soon as they are two weeks old, so that they can eat when they like and not be bothered by the ewes. This is a great thing for making good early lambs. Unless you can produce a good to choice lamb you had better stay out of the sheep business. Keep the lambs eating grain. If necessary, shut them in the creep during the night. A good ration for the lambs is equal parts of corn, oats and bran, and ½ part of some good protein; linseed oil meal, if possible.

As soon as possible get the ewes and lambs out on some green pasture. Rye, barley or wheat are excellent pastures. This green matter will increase the flow of milk and will practically eliminate feeding grain to the ewes.

The quicker lambs can be gotten on the market the better. Don't wait until the whole crop is ready, but send them as they become of market weight, which is as close to 85 pounds as you can get them.

All lambs should be docked and castrated when about two weeks old. So many think this is a foolish practice. These are simple operations and can be done without any loss at all. Docked and castrated lambs will bring up to 1c per pound more than those not docked or castrated.

The flock should be sheared around May 1 or earlier if the weather permits. The wool should be tied with paper string and put in the long wool bags. This paper string and wool bags will be provided by the wool pools over the State. The average flock of sheep should shear between 6 and 8 pounds. Another operation and a very important one that can be done at shearing time is drenching for stomach worms and dipping for sheep tick. This operation alone is probably the most important one during the whole year. In this section of the country where we have lots of rainfall and plenty of hot weather the land becomes infested with the stomach worm. A new breeder just starting can get by for a couple of years without drenching, but eventually he will have to do so. Sheep should be drenched at least once a month during the summer months and dipped every two weeks.

As the ewes come off of the shearing table they should be drenched and then run right through a dipping vat. A good drench and one that is used quite a lot by sheepmen is 4 ounces of bluestone and 3 ounces of nicotine sulphate dissolved in three gallons of water. Four ounces of this solution should be given to mature sheep, 3 ounces to yearlings and 2 ounces to lambs. There are several different ways of giving this

drench, but probably the best and easiest is with a 2-ounce syringe. Any good commercial dip is satisfactory for dipping purposes. This should be mixed according to the directions on the container.

In summing up the most important points in the care and handling of the breeding flock, I wish to mention the following points:

1. Keep ewes gaining from the time they are bred until they lamb.
2. Careful attention at lambing time.
3. Creep-feed the lambs.
4. Have some green pasture in early spring.
5. Drench for stomach worms and dip for ticks.
6. If you can't produce a good to choice lamb, stay out of the sheep business.

MR. BAILEY: At this time I wish to introduce Mr. R. M. Kincaid of Elkton, who will give us his views as a breeder of purebred swine.

VIEWS OF A BREEDER OF PUREBRED SWINE

R. M. KINCAID, Elkton

The interest your Association has taken and the stimulating effect of meetings of this kind is rapidly making Maryland a leader in the production of purebred livestock. The work of your Association and its officers has created a real interest among the farmers of this State. And, this interest is being further stimulated by the tangible results which are being attained by farmers who are breeding purebred animals. The results obtained are proving to the farmers that purebred stock production is not a hobby, but a source of increased revenue and profit. They are also learning that intelligent breeding and care are necessary and handsomely repay the breeder for the investment he makes in his business.

In the presentation of this paper, I will feel amply repaid if my message reaches the operator of the average size farm in Maryland. I operate such a farm and for this reason devote the greater part of my time to breeding purebred swine. I have learned by experience that a farm of 150 acres lends itself admirably to hog production.

As the operator of an average size farm, I hope some of the things I have learned breeding purebred swine may be helpful to other farmers of my State. Farms which fall into this classification throughout the State usually are devoted to dairying, the farmer selling all excess grain produced for cash. My experience indicates that excess grains produced can be much more profitably disposed of when fed to swine. Mr. Grubb will, I am sure, give us some very interesting facts on the commercial aspect of the hog business with this same thought in mind.

A breeder of purebred swine must keep in mind a number of factors, which, if carefully observed, will contribute greatly to his success. These are: Selection of breeding stock; breeding; housing; and feeding—and I want to particularly emphasize the importance of the proper selection of breeding stock.

The boar should be selected from a large, sturdy litter, be large of bone with four strong legs under him and conform in all respects to the characteristics of his breed. The sows selected for the breeding herd should also be taken from large, sturdy litters, stand up well on their toes, and in all respects be the best representatives of the breed. All females should have twelve teats, well sprung ribs and be deep-bodied individuals. Both boar and gilts should be linebred.

It is most important that they be free from parasites, in good health, and fair flesh at breeding time. Also, it is advisable that all sows be bred to farrow at approximately the same time. By this arrangement, all the pigs can be wormed, vaccinated and weaned at about the same time. This makes the work and attention involved more effective.

At farrowing time the hog raiser must be on the job. The farrowing pens should be thoroughly cleaned with lye and hot water and disinfected before the sows are brought into them. The sows should be brought in one week before they are due to farrow and their udders washed with a good disinfectant. They become accustomed to the new surroundings by bringing them in early. Two or three days before farrowing, their ration should be cut 25 per cent and should include a grain which will be mildly laxative. Linseed meal added to the grain in their ration will serve this purpose. On farrowing day I usually omit their feed entirely or feed very lightly, depending upon the condition of the sow.

Be on hand at farrowing time, but do not interfere, unless it is absolutely necessary, as most sows are quite nervous at that time. Large sows sometimes farrow 3 or 4 pigs, then get up and walk around. It is advisable to remove these pigs to a box well bedded with straw and a burlap bag over the top, and in very cold weather, a lantern covered with a wire netting, will furnish sufficient heat to dry the pigs and keep them from becoming chilled. As soon as the sow has finished farrowing return these pigs to her and assist any that may seem too weak to secure their first meal. A normal pig is born hungry and will nurse at least once an hour for the first day or so. It is well not to disturb a sow for the first two or three days after farrowing, particularly if she is nervous and easily excited; avoid making any unnecessary noise and keep all strangers out—remember, the sow knows her keeper's voice and he can do more with her and the pigs than anyone else.

A pig is the only animal raised on the farm that increases its weight 500 times and it should be remembered that the sow's problem is far more difficult with a litter of ten or more little fellows, weighing two pounds each, than that of a cow with her one calf weighing fifty pounds or more. And, so, the pig's most critical period is the first three days, for they very soon learn to keep out of the way of the sow as she moves about the pen.

When the pigs are two weeks old, mark them for future identification and move the sow and pigs on to clean pasture. Be sure to provide a creep for their feed, as they will begin to eat when about three weeks old. However, leave them with their mother until eight or nine weeks old.

After returning the sow to the herd, take the pigs back to the farrowing pen, give each a worm pill and castrate all males not wanted for boars. Ten days later the pigs should again be taken back to the farrowing house for a second worm pill and all inoculated for the prevention of cholera.

I realize I have gone into this matter of farrowing in considerable detail, but have done so with the knowledge that farrowing and caring for pigs during their first ten weeks has caused numerous headaches and that more pigs are lost during this ten-week period than are marketed each year.

Housing is very important; hog houses need not be elaborate, but must be dry and well ventilated and all houses for breeders and growing stock should be portable so they can be moved, when occasion demands, to new pasture and thus insure proper sanitation.

The construction and location of the farrowing house is an important item in your success as a breeder. The farrowing house should be dry, well ventilated and partitions separating the pens high enough so that the sow cannot see into the adjoining pen. Guard rails, built ten inches high and ten inches from the walls, will help prevent the sow crushing her pigs and give them a place to huddle while sleeping. Each pen should have a clean-out door and an exercise yard, preferably to the south. The farrowing house should be so located with reference to the fields where the sows range during gestation so they can be easily driven into the house for farrowing.

And, finally, sanitation cannot be too strongly emphasized both for the houses and feed lots. My method of keeping feed lots clean is providing four fields and follow a four-year rotation of crops on these fields; namely, corn first year, wheat or barley the second year and some legume, such as sweet clover or alfalfa the third and fourth years. Pasture the herd on the legume one year, the next year plant that to corn and move the new crop of pigs into the next field of legume, continuing this rotation over the four fields. This plan enables the breeder to pasture each field one year out of four, thus ridding the soil on the other fields of all vermin and disease.

In this way fences are not disturbed and the only extra labor necessary is to transfer the portable hog houses, self-feeders and watering equipment to the next field to be pastured.

Water is an item very often overlooked. The old hog trough full of decaying vegetable matter has no place on a modern hog farm. Water tanks are now available equipped with float valves which keep a supply of clean, fresh water at all times. These tanks are equipped with oil heaters making water available in winter as well as in summer. You know hogs don't drink very much at a time, but they do drink often.

Feeding has not been given the attention it deserves. A balanced ration should be fed from birth to maturity. How often we see a litter of pigs doing so well while nursing the sow, only to grow thin and runty after weaning. This is a sure indication that their ration is

lacking in one or more of the essential food elements, and a balanced ration always insures the breeder of more economical gains. Make the food complete by incorporating all the minerals, vitamins and protein elements necessary to balance the ration with the fattening elements, corn, wheat, or barley produced on the farm. All feed should be fed ground and dry. Since a hog never eats more than he can handle efficiently, the most economical method of feeding the growing stock is in the use of cafeteria feeders. This type of feeder not only provides a constant supply of feed when the pigs want it, but also keeps the feed dry, thus eliminating the usual waste of feed. It has without a doubt proven the most economical method of feeding out pigs for the market. However, sows should be fed sparingly so as not to grow too fat and lazy.

A balanced ration will produce 100 pounds of pork for each 300 pounds of feed and enable the farmer to turn his hogs in five and a half months at an average weight of 200 pounds.

In conclusion, may I suggest that more attention be given to hog raising by the farmers of our State and that by so doing I am sure that greater profits will be realized.

MR. BAILEY: Our last speaker for our morning session is Mr. E. W. Grubb, Pioneer Point Farm, Centreville, who will give us some commercial aspects of the hog business.

SOME COMMERCIAL ASPECTS OF THE HOG BUSINESS

E. W. GRUBB, Centreville

Some weeks ago I was asked to prepare a paper that might be used at this meeting and later incorporated into the general report of this convention.

Naturally, upon receipt of such a request, I made an effort to get together some facts that might be of interest to others concerned with hogs. In doing this I have gone into our own figures at Pioneer Point for the year 1938. I should like to touch briefly on the highlights of breeding, management, feeding and selling as my part on this program.

First, we are in the business of producing Duroc-Jersey hogs for the market for the sole purpose of making money. There are many projects at Pioneer Point not primarily concerned with a financial return, but our hog business is and always has been a venture in which we have tried to be practical throughout. The result is that this department yields a better return year in and year out than any department on the place.

In spite of the fact that our Durocs are all purebreds, we do not keep up the papers, nor have we spent any money in an effort to secure a breeder market. I have sometimes thought that we should, but we are now engaged solely in the production of a market type hog—one that is compact, close to the ground and smooth. We believe that by using the best boars we can secure, and holding back only those gilts most suitable for our purpose, we are at last getting somewhere.

Now, to consider for a few moments how we endeavor to handle our herd. We normally breed about 100 brood sows twice yearly and market somewhere around 13 pigs and hogs per sow. Our practice, after trying many different measures, is to fatten off our spring litters and sell our fall litters as weanling pigs at eight weeks of age. On our present acreage we cannot produce enough grain to fatten off all the pigs farrowed on the place, and it has never seemed quite the thing to buy feed to too great an extent. In short, we base our livestock operations on the amount of feed we can reasonably be expected to produce, and this in turn involves selling our fall litters as pigs. For us, this seems to work to best advantage.

In the matter of breeding, we have found that it is vital to have our litters come in a fairly brief period rather than being strung out over several months. In the past we have made mistakes in this by not having a sufficient number of individual colony houses for all litters at one time, but we are building twenty new ones this winter to supplement the sixty we now have, and at present we have four boars in service. By this means we hope to have all spring litters farrowed within a thirty-day period. The result will be that we can double treat pigs more at one time and, what is still more important, sell fat hogs early without too many stragglers.

Experience has taught us that the time to begin feeding a pig is about three months before he is born. We give our bred sows carefully prepared rations comprising a hog supplement, bran, ground oats, ground barley, mineral, tankage, and some corn. In winter, as a rule we add some alfalfa meal to this feed or make some other arrangement for green feed. There is no doubt that the success or failure of a litter in a large measure depends upon its care before farrowing. When farrowing time approaches, the sows are put on lighter feed with middlings and more bran, and we usually add a little linseed meal to help the milk situation along. We farrow all litters in a central farrowing house and give the sows slop feed while they are suckling their pigs in the house. As soon as possible after farrowing, sows and litters are put out on clean clover sod.

Our fattening shoats are on clover all the summer months, either red or crimson. We run the hogs in about five units, as a rule, never permitting more than 100 to 150 in a lot. This is purely precautionary against outbreaks of disease, and we feel that it is the only safe method to follow. Our only exception to this is when the hogs are ready to put into corn fields; then we sometimes run large numbers in one field to clear off the corn before a fall-sown grain. In this connection, 500 shoats turned out last fall in 23 acres of corn, ate all the corn and part of the fodder in a little more than two weeks. Again, experience has taught us a lesson. Instead of fencing off a portion of a field to induce the hogs to make a clean job of hogging off, we knock down a number of rows each day and find that the hogs will clean this up pretty thoroughly before disturbing any standing corn. By this means you can in a way conduct your herd across the field from one side to the other.

As to the home-grown and commercial feed fed our hogs, we have concluded that perhaps the most interesting method of showing this would be to itemize the feed actually fed this year, giving the number of hogs raised, and leaving money values entirely to you gentlemen to figure out for yourselves. I shall try not to burden you with figures, but I believe that in this way I can show approximately how many acres you would expect to put into grain to support the number of hogs we produce.

In 1938 our spring litters totaled 775 pigs from 87 sows, an average of 8.9 per litter. In the fall we farrowed 696 pigs from 85 sows, a smaller average of 8.2 per litter. I wish I could report that all these went to market, but such is not the case. Our loss from mashed pigs is a considerable item in spite of all the precautions we take. During 1938, however, we sold 924 hogs on the market and 633 pigs. This included an inventory at the beginning of the year as a result of fattening fall litters in 1937. As was mentioned above, we normally sell about 13 hogs or pigs per sow each year and our 1938 average was almost exactly this.

To feed this number we used the following amounts of grains:

8,362 bushels of corn
4,826 bushels of barley
1,694 bushels of oats
20 tons of tankage
50 bushels of soybeans

Commercial feed comprising pig and hog supplement, bran, middlings, mineral to the extent of $1,693.13.

To bed houses, we used 37 tons of baled straw.

For those who might be interested in minerals for hogs, I may add that we use a cheaply prepared mineral consisting of 100 pounds steamed bone meal, 100 pounds ground limestone, and 50 pounds of iodized salt. This we sometimes mix in the feed and sometimes feed in boxes in the field. I prefer the boxes for general practice.

In the matter of acreage for a herd of this size, I am inclined to believe that the man with 100 brood sows who intends to fatten off his spring litter and sell his fall litter at weaning time will need approximately 200 acres of corn, 125 acres of barley and as many acres of oats, as will produce anywhere from 1,000 to 2,000 bushels. I cannot say too much for winter oats as a feed for growing stock, especially pigs. We have grown winter oats for many years, have never failed to get a crop except one year when the ground froze two feet deep, and have had yields all the way up to 72½ bushels per acre. When a bunch of pigs is a little off, I would rather have oats to feed them than any other feed.

One of the most vital practices in the feeding of hogs is hogging off corn. The harvesting of this crop is the most expensive single item

per acre we have on the place, and this cost can be entirely eliminated by having shoats ready to go into corn fields when they are in the late dough stage. We hope this year to hog off all the corn on the place except the amount we need for brood sows and spring litters and the other departments on the farm.

Another important matter to the producer of hogs in large numbers is double treating. We have lived through some outbreaks and other forms of headaches where hogs are concerned, and we can safely say that you have not taken too many precautions if you do everything you know yourself and all you can find out. In the five years I have handled these hogs, I have learned a great deal about cholera, necrotic enteritis, worms in all their various forms, erysipelas, and several minor troubles. The answer to most of these, as we see it, is care and management—and the more the better.

Finally, this paper was to include something about selling. This will be brief and to the point. We have, this past year, sold hogs and pigs to the value of $19,449.39 and have made some money from the hog department after all the bills have been paid.

MR. BAILEY: I think it is fitting and proper that the Association draw up a resolution to be sent to the respective families of our deceased members; Mr. S. O. Jones, our late President, and General Clinton L. Riggs. Messrs. Clark, Harvey and McGregor appointed on this committee and submitted the following resolution:

WHEREAS: The members of the Maryland Stockmen's Association learn with deep regret the loss, by death, of our members Somerset O. Jones and Clinton L. Riggs during the past year; therefore be it

Resolved that this Association extend their deep sympathies to the members of the respective families and that copy of this resolution be sent to them. Above resolution adopted by those present.

MR. BAILEY: This, Ladies and Gentlemen, concludes our morning session. We will adjourn for luncheon and the afternoon session will begin promptly at 2:00 p. m.

Afternoon Session

MR. BAILEY: The first thing on our program this afternoon is a Meat Utilization Demonstration by Mr. K. F. Warner, Senior Extension Meat Specialist, U. S. Department of Agriculture, Washington, D. C.

Mr. Warner gave a very interesting and practical demonstration on cutting of the lamb carcass. He emphasized the basic principles involved in the cutting of all meat products and pointed out differences in the various grades of the lamb carcass. The demonstration illustrated a rapid method of preparing the lamb carcass for home use.

MR. BAILEY: Our first speaker for the afternoon session is Mr. K. A. Clark, Oldfields Farm, Galena.

TAKING INVENTORY OF THE DRAFT HORSE BUSINESS

K. A. CLARK, Galena

There are a number of things that have happened in the last year or two that might be inventoried a bit. Possibly the most gratifying and far-reaching development affecting horsemen in the last year is the refinement and perfection of control measures for equine encephalomyelitis. Scientists have wrestled with this disease for a long time and its cost to horsemen in this country has been terrific, especially in recent years. It is an old disease and one which has been known and written about in veterinary journals since the year one. Now a couple of smart young fellows have discovered that they can inoculate unhatched hen eggs with these encephalomyelitis bugs and make a vaccine that is practically a sure shot in the control of the disease. As a result, Maryland and other horsemen will rest a little easier as the 1939 mosquito season descends upon us. Undoubtedly, the biggest single asset in our 1938 horse inventory is the development of the control measure for equine encephalomyelitis. I presume our Veterinary Division will keep us posted on how best to use this new vaccine. They have all the details and will, I am sure, supply us with any information requested.

Noticeable advancement has been made in the purebred business. James Davidson of Belair Farms is putting the Clydesdale horse business on the map. They sent over to Scotland and brought back a brand new, very attractive two-year-old stallion. Other Clydesdale breeders have likewise been buying some good breeding stock. Our Belgian friends have been buying mares and stallions in several of the better Ohio, Iowa, Michigan and Indiana herds. The Belgian boys have also been meeting all the boats from Belgium and bringing a few of the best imported females to this State. Mr. Charles Rieman is due a big hand for his interest and enthusiasm in the promotion of the Suffolk Punches. The success of the Frederick County Percheron Breeders' Association, which was formed in 1937 has been phenomenal. The Percherons are in good hands in Maryland and 1938, the period of which we speak, has been a good year for them.

A large important space in our inventory report is occupied by the very creditable record of The Maryland Horse, that big, little magazine which is the production of Humphrey Finney. It is going in increasing numbers to every state in the Union. It circulates among this nation's best horsemen; it is going to an impressive list of horsemen in foreign countries; in short, Finney is doing a good job, both by the magazine and especially by those horsemen who are among his subscribers. I think he would be justified in criticizing us fellows for with-holding a lot of ammunition that he should have along the line of news, sale and show reports, etc. He personally writes most of the material that goes in this publication. We could help him much in this if each of us would put our shoulder to the wheel. Every Maryland horseman should

consider himself a news correspondent for The Maryland Horse. Let's make it hum!

During the past year the Maryland State Fair and Agricultural Society presented a dynamometer to the University. This dynamometer measures the pulling capacity of the horse. It has been used by several fairs throughout the State during the past year and the Pulling Contests that have been staged have been very successful. The Pulling Contest is the same to the draft horse industry as the Babcock Test is to the dairy industry or the track is to the racing industry. To my mind, a horse that will not pull is not much good. It will be a great day for Maryland horsemen when the pulling contests in this State are well patronized and good teams are competing. When that time arrives, our teams will be better bred, better grown and developed, better trained, better equipped, better managed, and a valuable by-product of this development will be a much more capable community of teamsters, drivers and horsemen.

Now, a few words concerning Colt Clubs. A few years ago, before 1938, the 4-H Colt Clubs were started in some of the upper Maryland counties. Now, over half of the counties in Maryland have at least a few colt club members. Four-H Colt Club members present the finest opportunity in the world for the training and development of the art of horsemanship. The reason this is so is because boys and girls of that age are impressionable and learn quickly. They can grasp, whether it be dairying, poultry husbandry or horse husbandry, and they retain more with the same amount of effort than a bunch of we old moss backs. Did you ever try to break a horse after he reached ten years of age? If so, you know what I am talking about. No type of project in the realm of agricultural educational projects pays as big dividends as the 4-H Club projects, and my hope is that we can add to our attainments in this direction until the accomplishments are many times those of our present inventory. When I first came to Maryland in 1923, I was depressed by the deplorable condition of the horse industry. So many teams were poorly hitched, carelessly driven and raggedly equipped. They just didn't look good. I tell you, we must teach our boys a lot of horsemanship and coach them concerning the care, feeding and management of horses before we can claim ours to be a "horse State."

A noticeable improvement has been seen in the draft horse shows held this past year. I can remember when the Frederick Fair was a great horse show, yet, in 1931-32, horse exhibits were entirely discontinued because there was little interest and no entries and the Frederick Fair officials simply discontinued the classification. The same was true of Timonium. Hagerstown persevered and never failed to stage its draft horse show, but on the whole they were a pretty shabby lot of shows until three or four years ago. However, late years have brought a great change and I am proud to report that respectable shows took place pretty generally over the State from Cumberland to Easton during 1938.

This concludes what I have to say except that the prospects are bright for a bigger and better inventory for 1939. I have enjoyed being here today meeting friends and listening to the talks of others on the program.

MR. BAILEY: Our next and last speaker for this afternoon's session is Mr. H. S. Finney, Editor of the Maryland Horse.

THE OUTLOOK AND SUGGESTIONS FOR PROGRESS

H. S. FINNEY, Towson

I think the outlook for the horse business in the State of Maryland is better today that it has been in the fourteen years that it has been my privilege to work and live in this State, provided that certain things are done. I think that if the outlook is going to further improve, we have got to do a few things, and I personally think there are several things which have been overlooked in the past. I believe one has to stick to a higher class of animals on his farm in a lot of cases, and I believe that he has to pay more attention to soundness and quality in breeding stock and more attention to care and management of the horses when they are turned out on farms. Maryland, in the last few years, has attained a high position in the horse ranking states of the nation, largely due to efforts of a few breeders who have come out and bought high class horses of various breeds. I may be jumping the gun, but I understand that a Frederick County stallion was selected at Chicago to be second in the breeding types of the whole country. I cannot announce the name of this horse at the present time, but am sure that an official announcement will be made very soon.

In the Belgian business, I think we can look for a great deal of improvement in the State because just recently some very high class animals, which have come from the west and abroad and perhaps some of the best are American bred, have been added to Belgian herds in the State.

As for Clydesdales, the Clydesdale colt that was imported to Belair Farms was champion at Timonium and the general demand for them is steady and good.

If we want to put Maryland on the map insofar as horses are concerned, I think we have all got to realize that now is the time to get away from breeding to scrubs. After you have made the initial investment, when you come to sell your stock you will probably net ten times as much. It would not take long to make a sale, in most cases, if registration papers could be produced to the buyer. In order to make the best sales you have to command the respect of your buyer. You must show him that you have gone out and spent money for your stock, and in return, he will pay you more if your stock is worth it.

Mr. Clark mentioned the 4-H Clubs. I think we should give a little more attention to 4-H Club work, individually, I mean. If you men

who are farmers and breeders will just go out of your way to contact the agricultural teachers and invite them to bring boys and girls out and show them your purebred horses, regardless of breed, you are doing a good thing for the State, because anyone with experience knows that the thing that pays is to get youngsters interested in what you have on your farm.

The Pulling Contests held during the last year in the State are, so to speak, in the formative stage, and I think show great promise in the way of educational exhibits. About the only way that you can combat the competition of the tractor is to work out the most economical hitch and get your horses to meet competition on their own ground. The Maryland Horse Breeders' Association will be glad to help each and everyone of you. We want to improve not only the light horse interests, but also draft horse interests.

In regard to encephalomyelitis, Mr. Clark mentioned the discovery of the vaccine and I agree with him that this is the greatest single item that has happened during the past year, because this disease has already become a menace to horse breeders of all kinds, and also to all of us who have children, because if you don't take precautions to prevent your horse from getting it you may lose a child, as the virus is carried from horses to humans by the mosquito. A report on equine encephalomyelitis was made by Dr. Schoening before the Horse and Mule Association of America at Chicago, which I think, would be a very worth while article for all of us to have on file. Copies of this are now available at the office of the Maryland Horse Breeders' Association.

In 1934, we lost over 250 horses of all kinds from this disease in one county, so you can readily see that too much emphasis cannot be placed on methods of controlling this disease. The University of Maryland has in its Extension Service and in the Livestock Sanitary Service trained men who are at your service and who will be only too glad to help you, and if you don't take the trouble to get in touch with them, to my mind, you are criminally negligent.

Another disease that we have to watch very closely in the State is periodic opthalmia. This disease may not kill your horses in the same way that equine encephalomyelitis will, but it does affect the market value tremendously, and so far, no one seems to know what it is all about. The U. S. Department of Agriculture and the University of Maryland are trying to obtain more information on this subject and we could all help them greatly if we would notify the respective County Agents when a prevalence of periodic opthalmia is first noticed, so that the case may be observed immediately. Too many horsemen think their horses are merely suffering from a common cold when their eyes begin to water.

Shipping fever is another disease of which one has to be aware, because if horses are shipped around from place to place they are apt to bring the germ and you have to watch closely for it. If we are going to

keep our place on the map, that's another thing we have to watch for and work against to keep us going as we are.

Last year Frederick County had a Percheron tour and all were agreed this was an interesting and profitable experience. I think we should have more tours of this character so that the other fellow will know what we are doing on our farms and how we do it.

Another thing that I believe is going to be important in the State is the use of the knife on your yearling colts. I believe that a few years ago there were nowhere enough stallions to go around. Instead of being able to sell your purebred horse as a stallion, I think you are going to find that the future is going to have to depend, to a large extent, on the gelding. Look over your purebred stock; use the knife. A gelding is much easier handled and can be turned out with fillies, and in the long run, you are helping your purebreds if you will ruthlessly castrate all except your high class colts and make them stallions.

Another thing that will help the draft horse business and help to keep us in the business, would be for each community to hold a stallion parade each spring. I think all of us are very busy in the spring and if we could go to one community and see all the stallions in that community it would save considerable money.

Before closing, I do want to call your attention to the dynamometer which the Maryland State Fair and Agricultural Society presented to the University for educational purposes. I have attended several of the fairs where Pulling Contests were staged and I don't believe I have ever seen any one thing create as much interest. This dynamometer is a fair means of determining who has the best team and I want to urge all of you to hitch up your team, come to the fairs next year and prove to those in attendance that the horse is here to stay.

In conclusion, I want to remind you that the staff of the University of Maryland is willing to help you with your problems. If possible, stop in and tell them what you would like to know concerning your various problems, get their ideas, and I think you will find that the Animal Husbandry Department, and the College of Agriculture in general, is a whole lot stronger than it has ever been before. I thank you.

MR. BAILEY: This concludes the day sessions of our Tenth Annual Meeting and we will adjourn until 6:30 p. m. when we will hold our Evening Banquet at the New Howard Hotel.

EVENING SESSION

Banquet

President George K. Bailey, presiding as toastmaster.

MR. BAILEY: It is indeed gratifying to see that so many of our stockmen have stayed for the banquet this evening. First on the program we have Mr. Mylo S. Downey, Assistant State Boys' Club Agent.

ACCOMPLISHMENTS OF 4-H CLUB BOYS

MYLO S. DOWNEY, College Park

It is naturally a pleasure to present to you some of the 4-H Club members of our State who have so ably represented Maryland at Chicago where they attended the National 4-H Club Congress and the International Livestock Show.

Before introducing these young fellows, I might take a minute to mention a few of the high lights of the Livestock 4-H Club work of the last year. Our total enrollment exceeds that of previous years. We had more baby beeves and more fat swine at the Baltimore Livestock Show than ever before. More boys are learning improved practices in livestock production, although we didn't have anyone showing a champion.

A few innovations of 1938 were:

Livestock Judging Contest and a Baby Beef Show at Timonium, a Horse Fitting and Showing Demonstration for 4-H Club teams, the Western Lamb Feeding Projects which are being carried on by club boys in five counties.

Another high light was the Western Maryland Baby Beef Sale where 21 calves from the three western Maryland counties were sold for an average of $15.50 per cwt. with the top going at 30 cents.

The Club worked out a rather unique advertising scheme along with the Hagerstown Fair that gave special recognition to the purchase of the animals.

Before presenting these boys, may I say that they were not selected because they were necessarily the best in the State, but rather because they were the type to represent Maryland in National 4-H Club circles.

Our group to Chicago includes the boys present this evening and Charles MacCartee of Howard County, State winner in the Rural Electrification Contest. The boys I shall introduce first composed the Livestock Judging Team from Baltimore County. They earned the privilege of the trip by winning the Maryland Livestock Judging Contest held in connection with the Baltimore Livestock Show. In Chicago they competed with 21 teams from other states, placing sixth, with Illinois being the only team east of the Mississippi River to beat them. I will ask the members of the team to stand. James Prigel, Earl Uzzell, Milton Poffel. Earl was ninth high individual and Jimmie Prigel placed sixteenth. I am sure the entire State is well pleased with the team accomplishments. Their success has been largely due to the training in the fundamentals in the county, plus the amount of work done between the State and National Contest. Wheeler Ensor and Jim Outhouse deserve a great deal of credit for the manner in which they developed this team.

Another boy we have been seeing and hearing a lot about for years is Daniel Poole, a Poland-China breeder from Frederick County. He has contributed a lot to the 4-H Club and F. F. A. work, as well as to the livestock industry. Dan was sent to Chicago by the Union Stock Yards because of his outstanding accomplishments.

This year we had two boys to make the trip for the same reason. Roland Mullinix was Maryland's first club member to win the Wilson trip awarded annually to a livestock club member of the twelve northeastern states. Roland has a little different type of livestock program from Dan in that he is more of a feeder than a breeder of livestock. At the present time he tells me he has a pen of 15 western lambs, 50 hogs and 4 Angus calves on feed. He was one of the few Maryland boys to exhibit all three types of livestock at a Baltimore Livestock Show.

The fellow we have saved for last is by no means least. He hails from Harford County where he has been a 4-H Club member for ten years, active in his F. F. A. and now farming for himself. Each year the Maryland Bankers' Association awards a trip to Chicago to a livestock club member who demonstrates that he has the "go-giver" attitude as well as the "go-getter." We found such a person as this in Clifford Smith of Harford County.

We feel that these trips and contacts are of vital importance in the lives of these young men and do serve as an inspiration for worth while achievement. We appreciate the efforts of everyone who makes them possible.

MR. BAILEY: Our next speaker for this evening is Dr. Mark Welsh of the Livestock Sanitary Service.

HIGH SPOTS IN OUR 1938 LIVESTOCK HEALTH PROGRAM

DR. MARK WELSH, College Park

I am very glad to have this opportunity to briefly discuss some of our problems in the control of animal disease in Maryland. Many of these problems are of long duration, such as the eradication and control of tuberculosis, Bang's disease, hog cholera, rabies and others. Unfortunately, however, new diseases, ailments and conditions become slowly established in our flocks and herds and through various channels spread and assume increasing economic importance.

All of you are familiar with our work on the eradication of bovine tuberculosis and, I presume, know that all counties in Maryland are now listed by the Federal Government as Modified Accredited Areas. To maintain this rating under the Federal Plan, it is necessary that we retest at least 10 per cent of the cattle in these counties every three years. Only a few years ago several of our counties, where dairying is the major industry, had from 12 to 36 per cent of the animals infected. With this heavy initial infection we have not felt safe in retesting only ten per cent of the cattle in the county. We have been testing virtually all cattle not in accredited herds every two or three years, as conditions will permit. During the past year, in addition to our other work and with additional help from the Federal Government, we have re-accredited five counties and during the next fiscal year we expect to re-accredit seven other counties. We found relatively few cattle infected on the retest

work but we did find some herds with as many as 70 per cent of the animals reacting to the test. I would like to emphasize, however, that bovine tuberculosis has not been eradicated and that if we are to hold the gains that we have already made, we must continue tuberculin testing our cattle for some years to come.

Encephalomyelitis again occurred in the early fall, and our records would indicate, caused the death of approximately 90 horses and mules. The majority of the cases occurred between August 1 and October 15 and approximately 90 per cent of those showing clinical symptoms died. A new vaccine, made by growing the virus of the disease in chick embryos about 12 days old, was extensively used in this and other states. This vaccine is apparently much more effective than anything previously available and it is claimed that immunity begins to develop in the horse within 24 hours after treatment is started. It is too early to verify all of the claims made for this new vaccine but our experience so far would indicate that it is most worthy of a trial in those sections where the disease exists.

Outbreaks of hog cholera continue to diminish year by year, but it is still the major problem of the hog lot. Our records over the past 18 years conclusively show that—

1. Eighty to eighty-five per cent of hog cholera outbreaks are due to feeding cholera infected bones, rinds, and scraps of pork in the kitchen refuse and commercial garbage.
2. Approximately five per cent is caused by the purchase of hogs that are sick with cholera or have been exposed to it.
3. Nearly five per cent is caused by permitting roving sick hogs to come in contact with susceptible swine.
4. Infection caused by the use of the serum-virus treatment, virus spread by dogs, buzzards, streams, vehicles or other mechanical means are responsible for a relatively small number of outbreaks.

It is obvious that anyone who wishes to protect his swine against hog cholera can do so through proper feeding and management methods and will need anti-hog cholera serum or other protective treatment but rarely.

Swine erysipelas continues on the increase and the serum treatment is proving effective in early cases but is of little value when the disease has become established. We know that pigeons may spread this infection and it appears now that wild birds, rodents and fish may also be carriers.

Abortions in swine due to an organism similar to that causing Bangs' disease has been encountered in some few herds but does not appear to be widespread.

Periodic ophthalmia of horses is still an unsolved problem. Research work is being conducted on this disease by the Federal Government and several Experiment Stations, but so far no satisfactory treatment or preventive has been developed. Various vaccines, serums and foreign proteins have been used in treatment of horses suffering from periodic ophthalmia but the results are far from being uniformly satisfactory.

About three years ago we started running pregnancy tests on mares using virgin white rats as test animals. The test is most efficient when the blood is examined between the 40th and the 120th days following breeding. If the mare is not pregnant, little if any change occurs in the rat. If she is pregnant, the rat's ovaries and uterus are much enlarged and inflamed. During the past year approximately 300 mares were examined and our data so far would indicate that the test has been about 95 per cent efficient.

In our cattle herds Bang's disease is still the paramount problem. We now have approximately 1,100 herds containing about 22,000 animals listed as being Accredited Bang's Disease Free herds. In all, there are now nearly 120,000 cattle under test of which about 85,000 were negative on their last test. Unfortunately, due to a lack of funds for indemnity purposes, we are unable to accept all of the herds under State supervision that are presented to us. At the last Legislature it was anticipated that there would be a surplus of unbudgeted funds derived from the tax on the manufacture of liquor. One hundred thousand dollars of the anticipated surplus was allocated to paying indemnities on cattle that reacted to the Bang's disease test and were slaughtered, contingent, of course, upon this surplus being available. In the early fall we were committed for approximately $96,000 when we were informed that the tax receipts were falling short of the amount expected. It was further found that there was only approximately $87,000 available and the difference had to be made up from every source possible in our budget. There is reason to believe that the sum available for the current year may not exceed $50,000 and as a consequence we will be able to accept few, if any, herds in addition to those now under supervision unless additional funds are provided. It is my understanding that an effort will be made to secure additional funds for this work during the current year, but we have no definite assurance that it will be made available. Until we have such assurance, we cannot increase our current indemnity payments without danger of exceeding our budget allowance.

Para-tuberculosis or Johne's disease has been found in several herds. This is caused by an organism somewhat similar to the germ causing tuberculosis. It localizes in the intestinal tract and causes a great thickening of the membranes and is accompanied by diarrhea and marked emaciation. It progresses slowly through a herd and may cause a very heavy loss over a period of years. Within the last year new tests have been developed that give much better results than those used in the past and it is now being eradicated under the same plan as that used for the eradication of tuberculosis.

Another infection that is causing increasing concern is trichomoniasis. This is caused by a protozoan which is spread by the bull at time of service. It is a most difficult disease to diagnose as the organism must be found by microscopic examination. No blood tests or other means of identification have been developed so far. Infected animals usually abort within a few months after exposure. If allowed to remain open for

some three or four months, the majority apparently develop an immunity and continue normally from there on. The infected bull, however, may continue to act as a spreader for an indefinite period. Experimental work is now being conducted in several places and it is hoped that we can develop curative treatments and better diagnostic methods.

Parasitic diseases of our domestic livestock exact a much heavier toll than is commonly thought. About ten years ago the late Dr. Morris Hall, Chief of the Federal Zoological Division gave a very able discussion of this problem before this Association. He, at that time, estimated that parasitic diseases of domestic animals in Maryland were costing us two to four per cent of the value of the stock each year. He also stated that more was known about the domestic parasites of Maryland livestock than of most any other state and less had been done. To remedy this latter condition, we have recently added a Veterinary Parasitologist to our staff to assist, if possible, in reducing this one to two million dollar annual loss from parasitic diseases.

It was necessary during the year to quarantine all or parts of three counties because of rabies. As has been previously reported to this Association, rabies is spreading and increasing in virtually all states east of the Mississippi River. Dogs, like other livestock, are rapidly moved in automobiles from one location to another and, of course, carry their infection with them. It is imperative that we have adequate dog laws that are strictly enforced before we can hope to control this most dangerous and costly infection. Inasmuch as dogs cause considerable destruction of livestock and are often dangerous to the public health, I hope that this Association may see fit to give consideration to the dog problem in this State.

Our quarantines have been effective in stamping out the several outbreaks that have occurred in the past few years because of the fine cooperation we have received from the people, the police and the local officials. These quarantines, however, are expensive to maintain and do not entirely solve the problem. Our chief danger comes from the roving stray dog and the unwanted dogs. Our records would indicate that these constitute about ten per cent of the dog population of each community and we can have relief from them only through strict enforcement of adequate dog laws.

Since 1935 we have greatly increased our laboratory diagnostic service. From about 1930 to 1935 we had only one laboratory located at College Park. Blood samples, milk, tissues and other materials shipped from outlying parts of the State were often unsatisfactory for test purposes when they arrived at the laboratory. To make this service more useful and effective we established branch laboratories in Baltimore, Salisbury and expect to soon have one in operation in Centreville.

The laboratory space and service are provided by the counties in which these are located and the Livestock Sanitary Service provides the personnel. It is quite apparent that these laboratories are being increasingly

used in the interests of the livestock industry as the diagnoses made have increased from 120,000 per year in 1935 to nearly 310,000 during 1938. These laboratories, together with the other facilities of the Livestock Sanitary Service, are maintained for the assistance and help of all of the people of the State. We are doing our best to give you efficient, prompt service and I want to express my appreciation and that of my colleagues for the kind cooperation you have all given us.

MR. BAILEY: Our concluding speaker for the evening is Dr. Hugh C. McPhee, Chief of Animal Husbandry Division, Bureau of Animal Industry of the U. S. Department of Agriculture, Washington, D. C.

Dr. McPhee addressed those present on "Recent Genetic Research and Its Practical Application."

MR. BAILEY: I wish to express my appreciation to those present, and on behalf of the Association, sincerely thank those who helped to make this meeting a success. We hope you will all be with us again next year and that the year 1939 will have bright prospects in store for you.

REPORT

OF THE

ANNUAL MEETING

OF THE

Maryland Tobacco Growers' Association

January 11, 1939

The Maryland Tobacco Growers' Association held its annual membership meeting at the Lord Baltimore Hotel, Baltimore, on Wednesday, January 11th. Hon. Thomas Parran called the meeting to order, and the first speaker on the program was Dr. Thomas B. Symons, Director of Extension Service, University ofMaryland, who stated as follows:

"Twenty years ago, when the Maryland Tobacco Growers' Association was organized, there were 5,000 cooperative organizations operating, doing $600,000,000 business annually. Today, there are 15,000 such organizations, doing a business totaling $2,700,000,000. Two decades ago not one in ten farmers did any business through a farmers' organization; today, 50% of the farmers do business in some form through a farmers' organization, either through a cooperative selling or buying organization, which increase is justly right and correct.

"It has been found by those in contact with organization work that 25% opposition among farmers to a cooperative organization, in not handling their business through such an organization, can break an organization and nullify its efforts. The Maryland Tobacco Growers' Association handles 40% of the Southern Maryland tobacco crop, with 60% going into the hands of the opposition. Even in the face of this, the Association maintained the tobacco market to the point where parity prices on tobacco have been secured in eight of the past ten years, although practically every other farm product has been considerably under parity price, which showed that the Association's efforts, with even a 40% organization, have been producing outstanding results, according to the power given it by its members."

Dr. Symons further stated: "The people of Southern Maryland should appreciate the work that the Maryland Tobacco Growers' Association has done and cooperate more fully than they have in the past."

Dr. Symons advocated that the Maryland Tobacco Growers' Association set up rules that are more strict than those at present in effect, in regard to membership, in order to have only true cooperators in the organization, as the support received from some people during certain years, and lost during other years, has not been helpful to the industry as a whole.

Dr. Symons further produced statistics to show that the production of Maryland tobacco from 1932 to 1938 has not increased, although the increase in cigarettes has been from 103,000,000,000 to approximately 165,000,000,000, or an increase of approximately 60%. He further stated that the Association has been calling this fact to the attention of producers, advising them that, for the benefit of their own organization and business, they should keep the production of Maryland tobacco up to the increased consumption of cigarettes, as each year the cigarette consumption has increased, and the percentage of Maryland tobacco in cigarettes has decreased, to spread the crop through the cigarettes made, and it has now reached the point where such a small quantity of Maryland tobacco is being used in cigarettes, that if the percentage of Maryland tobacco used in cigarettes is decreased to any further extent, it might be possible that cigarette manufacturers might eliminate Maryland tobacco from their brand, and Maryland will thereby lose the market it now enjoys. Dr. Symons advised the Maryland farmers to increase their production, so that the cigarette manufacturers might be enabled to use a larger percentage of Maryland tobacco, and to bring further competition on the market in the form of other companies, who are not now buying Maryland tobacco, because of the fact that not enough Maryland tobacco is produced to justify their purchasing it. He stated that the people of Southern Maryland would do well to heed this warning, for their future benefit.

Dr. Symons further pointed out that Maryland tobacco being bought by foreign countries was approximately 11,000,000 pounds in 1928; as contrasted with less than 4,000,000 pounds in 1938. He advocated, as a remedy for this situation, that the farmers pack their tobacco more strictly to grade than they have in past years, although there was considerable improvement in the stripping and packing of tobacco during the past year.

Mr. George Sachse, Manager of the Maryland Tobacco Growers' Association, then made his report and pointed out to the farmers that the Association had no stockholders and that its surplus, which is now in excess of $258,000.00, belongs to the farmers of Southern Maryland, on which they have received substantial dividends in the past. He further pointed out that this surplus should be built up to $500,000, so that the Association can finance its own operations without having to borrow money, and when this point is reached, no further profits will have to be put to surplus; no interest will have to be paid on borrowed money and the dividends to the farmer will be more than double what they were in 1938, and although this was generally recognized as a bad

year for business, the Maryland Tobacco Growers' Association distributed from its 1938 operations over $42,000 to the farmers, in the form of dividends and discounts.

Mr. Sachse stated that even on the present basis of the Association's doing business, if continued for the next five or six years, this point would probably be reached. However, if the Association received 80% of the tobacco grown in Southern Maryland, instead of but 40%, this point would probably be reached within the next three or four years.

Mr. W. B. Posey, Tobacco Specialist, University of Maryland, then made a brief address, and pointed out the fact that they experimented with three different grades of 4-8-12 fertilizer, the best of which produced results averaging $358.00 per acre; and the worst, $258.00 per acre. He pointed out the fact that the analysis of fertilizers, such as 4-8-12, is not all made of the same material; and that although a fertilizer might be of the same analysis, the results may widely differ because of quality.

Mr. George I. Gardiner then reported the results of the tobacco market which showed that the Association had taken steps to establish and maintain a market on the 1937 crop, sold in 1938. However, because of lack of quality in the tobacco sold during 1938, there was a lack of competition. He felt that with the 1938 crop being of better and larger quality and quantity, that the results would be more satisfactory to the grower; and that with increased support from the farmers, the Maryland Tobacco Growers' Association could and would establish a market that would be very satisfactory to them.

Mr. Gardiner also very cleverly brought out the changed and present status in our economic conditions in agriculture that not only controls the price of our tobacco but must be studied and analyzed so that we might be enabled to get for our producers all possible out of their tobacco, as the price of tobacco is not only involved but the future outlook and forecast of principles to be considered from this source are a complete revolution for the farmers' organization to handle, from five years ago, and needs all the strength of the tobacco growers of Maryland that they can give organized efforts to handle the marketing of tobacco in the interest of the growers.

Fourth Annual Summer Meeting

OF THE

MARYLAND STATE POULTRY COUNCIL

July 27 and 28, 1938

Ocean City, Maryland

OPENING ADDRESS

J. W. SNODDY, President, Lanham.

When we first began to make plans for our Summer Meeting we remembered the fine reception and hospitality accorded us here at Ocean City, two years ago, and so the occasion of the Fourth Annual Summer Meeting of the Maryland State Poultry Council finds us with you again. Looking out over the great expanse of ocean I am reminded of an old Welsh peasant who had lived inland all of his life and who had had a very hard time of it on his small farm. In his old age he came for the first time to the seaside. When he saw the sea, he said, "Thank God for something which there seems to be plenty of." It is with that thought in mind that we have prepared a program with plenty of speakers who have something of interest and value to bring to us.

We have met here with poultrymen from neighboring states to discuss our problems in an intelligent and understandable way. I believe each of us will have learned something worth while by having come here where we can enter into discussions and learn how best to meet and overcome some of our most difficult problems. Through intelligent questions and brief discussion we can bring out points that are most helpful. (In this connection may I state here that since the time allotted to each speaker is of necessity limited, you keep close to the point in asking questions and do not wander afield).

The greatest things done for our industry do not come to the surface immediately. Long, slow, and sometimes painful processes are necessary to change old and develop new habits of thought. Nothing good done for our industry has been wasted. What has been accomplished has been by hard work. It required time and hard work before our legislature to obtain what we have. The battle for proper recognition of the poultry industry has been a long, hard, and oftimes discouraging one. Many valiant men and women became weary and disheartened and dropped out; others, fresh and eager for the fray, stepped in and the fight went on, until victory has been won on many fronts. The war is not over. There are many more battles to be won. It is not by finding

new and easy paths that we can win. It is by holding hard to the handle of the plow and driving the furrow through. There was never a greater effort made to rise and meet the great emergency than the poultry people are making today. We are in the midst of a struggle to place our industry upon a higher plane and to gain our rightful place in agriculture. Never in the history of our industry has there been greater need for united effort.

We need more and stronger local, county and state-wide organizations. The Council is no stronger than its members. It behooves each of us upon his return home to enter the fight with renewed energy. It is only through sacrifice of time and probably money that we can hope to win. Too many are willing to let the other fellow do the work while they reap the benefit.

We need to sell our organization; to create and preserve the interest of our producers by live programs of interest not only to the producer but to his friends as well. We need and must have the full support of our producers in order to convince State and Federal agencies that we, the second largest farm industry, are not getting our share of recognition.

We need an appropriation from our State Legislature at its next session, of $11,500 for the enforcement of our Fresh Egg and Inedible Egg laws.

We need a law prohibiting the sale by dealers of baby chicks of unknown origin.

We need a Voluntary Grades and Standards law setting standards and grades for farm products in the State of Maryland. These grades and standards should be higher than the U. S. grades. This would be of particular interest to the poultryman for it would allow him to sell under the Maryland approved stamp. It would be the means of creating a demand for Maryland products.

We need an appropriation for a Maryland exhibit at the World's Poultry Congress and for the entertainment of the foreign delegates while in Maryland.

We, the second largest farm industry in the State, have no representation on the State Board of Agriculture. We should, by all means, have a voice in its policies.

We should have a Federal Bureau of Poultry Industry.

We should have a division for Consumer Information at the University.

Our Poultry Transportation law should be strengthened by the encouragement of the use of tattooing and the registering of brands with police agencies.

We should actively foster and promote a Maryland State Agriculture Board to act in an advisory capacity to the Governor and the Legislature. It is assumed that members would be selected from the various farm groups.

Our State should put on an exhibit at NEPPCO.

Our own egg and chick show in 1939 should be worthy of the industry.

We should work for better breed improvement and for greater and

better disease control. There should be no reason for our poultrymen to go out of Maryland to buy chicks. The Maryland breeders should be able to furnish our broiler industry with its hatching eggs and chicks, thus keeping at home a large amount of money that is going to other states for chicks and eggs.

We should have greater profits in turkeys through better breeding, sanitation, feeding, and marketing.

We should encourage boy and girl club members entering the poultry industry.

It has been stated that the poultrymen of the East are in danger of being forced out of business. This statement comes from persons who have had the opportunity of close observation of the seeming unwillingness of poultrymen to improve their flocks, and the improper care of their eggs in order to place a quality egg on the market. The West with its cheaper feed and labor, can place a quality egg in our eastern markets at less cost than most poultrymen of the East can place graded eggs. If that is true, (and I, for one, do not think it true of a large percentage of our poultrymen,) we should begin today to improve our methods. We need to stop and take a look at the poultrymen of the Pacific Coast. They were faced with one of two things: To get out of business or to stay in by improving their flocks and producing better eggs, selling cooperatively. The result is that they are selling their eggs in our eastern markets for a better price than we are getting for near-by henneries. Are we going to stand idly by and let our markets be taken from us? I have too much faith in our producers to believe they will. I believe every poultryman here will go back home determined to do something toward improving his flock and will care for his eggs so as to maintain their high quality until they reach the consumer.

We have only to look at the score cards of the eggs exhibited in our show in Baltimore last winter to see that high quality eggs can be and are produced in Maryland. It is by raising well-bred pullets under sanitary conditions, well-housed, well-fed with a feed that will produce quality eggs and by properly caring for the eggs to insure their reaching the market as a quality egg, that we can hold our markets.

It was brought to my attention rather forcibly this week that some poultrymen do not know how or else are unwilling to care for their eggs properly in order to put a quality egg on the market. A certain packer was turning down eggs from one of our producers as bad. The producer went to the feed company which was supplying him with feed for help. After talking the matter over the man asked the feed company to take a sample of his eggs to another grader and see how he would grade them. This was done. The eggs were bad. They began to check up on the producer and found that he was gathering his eggs hourly in buckets and hanging the buckets to a rafter of the poultry house which was of the shed roof type with a tarred paper roof. The temperature in the afternoon immediately beneath the roof must have been more than one hundred degrees.

Friends and Fellow Poultrymen, I have attempted to sketch briefly for you the objectives of the council. I have also endeavored to point out to you that the accomplishment of Council objectives is a long, slow process. Hence, we must not be disappointed if our dreams do not immediately come true. I have tried to place before you the need for stronger member organizations; and, last, but by no means least, I have brought to your attention the necessity for better education in the care and marketing of products on the part of the producers.

Let us work together for bigger and better things! Let us put Maryland on the map! Let us make *Maryland* poultry products synonymous with *Quality* poultry products!

SYSTEMATIC IMPROVEMENT OF POULTRY BREEDING FLOCKS

CHAS. S. WILLIAMS

Extension Poultry Specialist

There has been far too little systematic breeding of poultry carried on in this State. The average egg production for Maryland is approximately 89 eggs. It requires approximately 100 eggs to pay for a hen's feed a year where she is kept under confinement. Where such a situation exists, you can readily see the need for more and better breeding.

Many poultrymen fail to realize that egg production qualities are inherited and that heredity is inescapable. Every year, too many poor producers are kept and used for breeding. Mediocre birds tend to reproduce mediocre birds and if egg production is to be increased the most careful selection of the breeding stock is essential.

There are many factors to take into consideration in the breeding of poultry. Besides being concerned with egg production, the size of eggs, shape, hatchability, size and type of birds and many other factors must be taken into consideration. All these factors are important because an ideal environment and a perfectly balanced ration will not make a good layer out of a hen that does not possess the characteristics upon which productivity depends.

Several methods have been used to improve the egg production qualities of farm flocks. One of the methods used and one of the oldest is the farm demonstration flock records. The average egg production in some of the states where such records are kept is 150 eggs per bird. However, in this work many interesting things have been noted. The females in these flocks are culled at the beginning of the year for vigor and external characteristics indicative of good laying ability. The males are selected for vigor and type. In 5 states where this type of work has been carried on for a period of 7 years or more, records show that very little progress in increasing egg production has been made. As a matter of fact, no one has ever presented evidence showing that the level of egg production is raised through mass selection of breeding stock.

Record of Performance Work is another breeding program that has done much to improve the egg production qualities of the breeding flock.

A R.O.P. hen is one that has laid 200 or more eggs averaging 24 oz. per dozen in 12 months. A R.O.P. male is one out of a R.O.P. hen sired by a male out of a R.O.P. hen.

Data collected from 3 states where R.O.P. work has been carried on for a period of 7 years shows a gradual increase in the number of birds that qualify for R.O.P. Another interesting thing, however, is that there is still a very small percentage of birds that qualify and this in itself shows the need for more and better breeding work in poultry.

A practical breeding program intended to produce superior breeding stock, it seems to me, must rest on a 3-point base, production record pedigree, and progeny test.

There has been in the past and still is too much emphasis placed on the first year egg production of females. Many poultrymen assume that since a hen has laid 200 eggs during her first year that she can't help but be a good breeder. Moreover, many poultrymen believe that the higher the first year record of the dam the more eggs her pullet progeny will lay. In other words, the number of eggs a bird lays during her first year indicates her breeding worth.

Data have been obtained from different sources which show that actually the first year egg production of a female is of very limited value in predicting her breeding worth.

The supreme test of the worth of a bird as a breeder is the kind of progeny it produces. This serves as a means of identifying superior breeding stock. It is particularly important for poultry breeders to be able to identify sires of superior breeding value because the average sire has about 10 times as many chicks as the average dam.

A practical and inexpensive way of progeny testing is to pick out the number of pullets this fall you will need for breeding purposes and divide them into pens. Then, keep egg records on these birds and mate them to cockerels of known pedigree and wing band the chicks that come from such matings. The pullets from these chicks can be carried through the same way and in turn you will be able to identify your superior pens.

In closing, I would like to say that the poultry breeders must learn that breeders cannot be selected by external appearance alone. It is the genetic makeup that counts. Methods must be used to identify superior breeding stock before progress can be made in poultry breeding. The intelligent selection of breeding stock by progeny testing on a family basis is the surest way of making progress.

BROILER MARKETING PROBLEMS

By Homer H. Pepper

Selbyville, Del.

The broiler business of today bears little resemblance to that of ten years ago when broiler growing was in its infancy on the Del-Mar-Va penisula. One of the oldest broiler growers of this part of the country who, incidentally, was the first man to build a house for broiler raising

alone in this section of the country, brought off in 1925 his first crop of broilers—1900 of his original brood of 3,000 (1,100 of the 3,000 died) were marketed at 58 cents per pound at a 2-pound average. Today he produces about 150,000, three times a year.

In 1927, 10 or 11 small loads of 80 coops were marketed weekly by all the growers, and that in the spring months, for broilers were not grown all seasons then as they are now. My estimate would be that today an average of 180 large truckloads of 150 or more coops are shipped each week, every week in the year. The U. S. Department of Agriculture reports that 42,042,590 pounds of broilers were received from the Del-Mar-Va penisula in New York City alone during last year.

There are, to my knowledge, no government figures available for other markets, so I present to you my estimate. My figures show that 45 per cent of the broilers shipped from here go to other markets including Philadelphia, Baltimore, Washington, Pittsburgh, and Newark. The total poundage of broilers shipped is thus brought to a conservative estimate of 70,000,000 pounds from the Del-Mar-Va penisula.

There are about 1,200 farmers on the Del-Mar-Va penisula producing broilers. Many of these, of course, are growing broilers as a sideline only. A grower in St. Michaels, Maryland, recently built a 525-foot broiler house after spending most of his life growing turkeys. A nearby grower is at present doubling his capacity of 40,000 chickens. Others are doing the same. It is evident that there is no let-up in sight in the production of broilers in Delaware and Maryland.

I might mention that New England is forging steadily ahead and many houses are being built on Long Island at the present time. The government hatchery report for July shows an increase over last year's orders of 800 per cent for July and later delivery.

The unlimited quantity of broilers available makes the question of quality of supreme importance. Our greatest problem in marketing broilers is to sell the vast bulk of inferior chickens. Good broilers sell themselves. It is growing more and more difficult to place advantageously chickens of only fair quality, and it is growing more and more difficult to get a fair price for the average class.

There are several reasons for this unusually poor quality which is such a serious problem at present. I believe the principal reason is that too much emphasis is being placed upon quantity. The last two weeks in the growth of a broiler is the most important time from the quality standpoint. It is during that short time that the broiler develops the color in the legs and the flesh and fills out in the breast and in the back feathers.

It is human nature for the grower to put his thoughts on the successful and early sale of his flock during these last two or three weeks, but it would be much more to his benefit if he would concentrate entirely on the broiler rather than on its early disposal. Together with the improper housing conditions, the grower is too anxious to get rid of his chickens just as quickly as he can. Often chickens are sold before they are fully

matured when they are too thin and lack the yellow legs and red combs of extra fancy broilers. Thirteen to 14 full weeks are required to produce good quality broilers of good average size.

If the problem of over-production becomes serious, and it certainly threatens to do so at the present time, the man with the best grade broiler will be the one that sells his chickens. At present, he is the one that receives the best price. In the future, he may be the only one to receive any price!

As for the price, the old law of supply and demand is the biggest factor in the question of price. The more broilers sold, the lower the price on a given day. When broilers are scarce, up goes the demand, and, consequently, up goes the price. Thus, supply and demand check each other and a natural price level is maintained. It is then that quality counts.

There is a second important problem in marketing broilers in addition to the quantity-quality circle. And that is the shipper himself. At the present time, the shipper is in a bad spot. He is being forced by the grower to take losses that are not fair to him. Everyone will admit that broiler-growers are making very handsome profits at present, particularly during the last year. For the average grower, the cost of raising a broiler to a 3-pound average is from 13 to 17 cents per pound, varying with the season of the year. When market prices are averaged, we find that the grower has received this year an average of 19.9 cents. This is an obvious profit of 2.9 to 6.9 cents per pound.

The shipper's lot is not as rosy. Competition among buyers grows more and more keen as production expands, bringing prices to such a high level that often the shipper is forced to sell at considerable loss when the chickens are marketed. For example, cross-bred broilers which have been bought at the farm for 16 to 17 cents have sold in New York for 17 to 19. Consider that the shipper's cost in carrying the broiler to New York is approximately 3 cents per pound, and try to balance the two. During the past spring the loss has at times been stretched to 2 cents per pound. This is a serious situation, for growers need shippers to dispose of their birds to the best advantage, and shippers cannot stand continual losses such as they have had to bear recently.

Aside from these two very serious problems of a need for better quality broilers and necessity for more complete cooperation between the grower and the shipper, broiler marketing is smoothing itself out as it goes along. The future of the industry looks as bright as the past if we can just remember one thing—we must not kill the goose that lays the golden egg.

REPORT OF DIRECTORS AND EXECUTIVE COMMITTEE

Your officers, as an Executive Committee, in line with standing order passed at Centreville, November 10, 1937, by the Directors, has acted in an executive capacity in conformity with the established principles and policies set forth in the Council, short and long distance programs. Matters relating to the expenditure of funds of the Council have been referred to the Directors for action.

Important action by the Directors at meetings during the 1938 winter meeting in Baltimore are covered in the Resolutions and other reports in the printed proceedings available at Headquarters Desk.

On March 24, at Annapolis, the Directors authorized publication of a State year book, but after investigation it developed that the time to secure advertising and prepare copy was insufficient to enable a creditable publication to be issued. Time and place of the 1938 summer meeting was set for Ocean City, July 27-28.

On May 13, the Board met at Annapolis in conjunction with the Maryland Poultry Improvement Board. Action was taken at this joint meeting on proposed revisions and policies concerning the administration of the National Poultry Improvement Plan in Maryland. Plans for the 1938 Summer Meeting were also discussed and policies relating to same outlined.

On June 1, the Board met in conjunction with the State World's Poultry Congress Committee at Annapolis, and with this committee assisted members of the University Poultry Department staff in working out detailed plans for Maryland's participation in the Seventh World's Poultry Congress.

The Directors at this meeting also authorized the publication of a 1938 Council Booklet in lieu of a yearbook which booklet sets forth the organization, objectives, constitution and other information concerning the Council. This booklet became available on June 15 and has been widely distributed in the state and nearby states. Final plans for the 1938 Summer Meeting were also made at this meeting.

Your President, Secretary, Mr. Copeland and other Maryland poultrymen represented the Council at the 1938 Summer Meeting of the N.E.P.P.Co. on June 21-24.

Respectfully submitted,

J. W. SNODDY, President.
W. H. RICE, Secretary.

STATE FAIR BOARD'S PROGRAM FOR POULTRY EXHIBITS

JOHN E. CLARK
Forest Hill, Md.

The Maryland State Fair Board was created by an act of the State Legislature in 1937, ending several years of effort by agricultural organizations and farm leaders to initiate a permanent plan for aiding agricultural fairs and exhibits throughout the State. Many of the progressive agricultural states have elaborate programs of state aid to agricultural fairs. The benefits derived from these expenditures have reflected in the progress of their farm people. We, in Maryland, believe that our agriculture will benefit from a similar program.

During the last few years Maryland, like other states, has had difficulty finding sufficient revenue to finance regular government expenses. Therefore, we have not been particularly anxious to take on additional financial

burdens. It was suggested, however, by one of the State's outstanding farm leaders, that inasmuch as the half-mile race tracks were requesting of the Legislature additional racing days, which would undoubtedly add to their profits, a tax be levied upon them to provide revenue for the promotion of our agricultural exhibits. The farm organizations, which are active in our legislative affairs, grasped this suggestion as a long-awaited opportunity, promptly framed the necessary legislation and obtained its enactment. Your organization put forth considerable effort in behalf of its passage.

The law provides that each of the half-mile tracks, which are licensed to conduct pari-mutuel betting predicated upon their holding a bonafide agricultural fair, are required to pay $5,000.00 in premiums to exhibitors of farm produce. In addition, these race tracks are required to pay, in taxes to the State, one per cent of all moneys wagered over $500,000.00; the $5,000.00 required for their own premium lists being equivalent to one per cent of the first $500,000 of wagers. They are also required to pay to the State five per cent of all net profits and any unexpended portion of their premium requirements. All moneys so received by the State are placed in a special fund by the Comptroller to be expended by the State Fair Board as provided by law.

The State Fair Board is appointed by the Maryland Racing Commission and is composed of nine members, representing insofar as possible, all phases of agriculture. The members serve without compensation of any kind. The Board makes an annual report of its business to the Racing Commission, which is incorporated in the Annual Report of the Commission to the Governor.

The function of the Board is to lend financial and advisory help to the various fairs and exhibits in the State. They have jurisdiction over all funds derived from the tax upon half-mile race tracks and also from a special appropriation provided by the Legislature.

After a year's experience the Fair Board felt that it was virtually impossible for them to ascertain the financial need of the various organizations or the value of the exhibits to the community without some field supervision. Last April, I was employed for this purpose and also to lend as much help as possible in organizing and promoting the programs of the fairs. Much of the field work to date has been a matter of analysis with respect to their program, classifications, and their apparent educational value. Observations to date indicate a similar picture of the problems confronting the agricultural fair of today.

It must be recognized that with the changing of times the part played by the county fair in the lives of rural people has, to a great extent, been replaced by highly specialized developments. Where the county fair was once one of the few social centers of the community, good roads and the automobile have brought rural sections closer together, and nearer the town and city, making available many sources of social contact. When the horse was used as a mode of travel, there were a great many fanciers of harness racing. Today, however, few people have a real appreciation

of this sport. The result has been that the throngs of farm people who once visited the county fair to meet with friends and neighbors have greatly diminished.

The management of fairs today find it more difficult than ever to conduct a successful exhibition of agricultural products without financial aid from other sources. This condition has resulted in a decrease in the money spent on agricultural exhibits, and an increase in money spent on amusements and other activities in order to attract greater attendance. In some instances this shift in emphasis has been so great that the agricultural phase of the fair has become secondary in importance, with the result of still greater decreases in attendance.

With this decrease many fair associations now find themselves with a plant of considerable expense to maintain, which can be used only a few days in each year. During the last few years some associations have found it necessary to borrow in order to pay their current operating expenses.

It is significant also that these organizations have, as a whole, lost contact with the farm people. Few farmers are willing to sacrifice time and effort in order to help the county fair. Organized farm groups take little or no part in its activities. It is necessary for a relatively small group to plan the program, advertise the dates and hope that the people will attend. The individuals, who give up their time and energies without compensation, are indeed public-spirited, but they are not able to give up all the time that is necessary to develop publicity, make contacts among the farm people and attend to every detail that enters into a highly successful exhibition from the standpoint of attendance and financial return. If a public function of this nature is to be successful today, it must be well planned and operated because of the competition furnished by similar activities which draw upon the public for support.

The educational value of the fair has, generally speaking, diminished, but not because the exhibits are necessarily of a lower quality. The farmer attends the fair to see a more superior farm product than that which he is accustomed to seeing at home or on his neighbor's farm. It did not take such high quality to be impressive to him a few years ago, but the farmer has grown since then and has improved his own production, so it takes an exceptionally fine exhibit today to be impressive or educational to him.

There is still a place in our agricultural development for the county fair, but with the decreasing need for its value as a social center we must turn our efforts to those functions which can be made to render a worth while service. I think it can be simply stated that the problem before us today in relation to these organizations is how to make them more educational. The educational value of these exhibits provides a justification for the State's investment in them. The State should be interested in amusement and other supplementary activities only in as far as they add to the general interest and attendance of the farm people. It is the

desire of the State Fair Board to strengthen as many of these organizations as seem designed to be of value to the progress of their communities. The Fair Board, I believe, realizes that the gala throngs of previous years cannot be recaptured. This reasoning suggests a change of philosophy of what part should be played in the development of the rural people by the county fair.

It has long been recognized that the county and State fairs are essential institutions in the promotion of our agricultural enterprises. They have served as a medium of education and inspiration for farm people. It has been through these exhibits that improved breeding of herds and flocks have been carried to many farms. In the breeding and improvement of any agricultural product it is essential that some facilities be provided to compare efforts of those interested in such improvements so that some uniform basis of perfection can be established. Otherwise, we would have a wide range of thought as to what constituted a standard type or conformation. Although there is some difference of opinion as to what should be the ideal, we are forced to accept a concensus of opinion as our guide. The producer of any agricultural commodity is primarily interested in the ultimate profit which it yields; poultrymen are no exception. Your profits are influenced by many factors, but those under your control are feeding and management, and to a lesser extent, the inherent efficiency of the bird. They go hand in hand with profitable production. Neither is effective without the other. Geneticists tell us that like begets like, but we all know that in many ways this is only literally true and that it is necessary to exercise constant vigilance in mating and selection to maintain a high standard of efficiency in our birds. The improvement of the inherent producing ability of our flocks calls upon the genius of us all. It is when we compare our produce at poultry exhibits that we have an opportunity to illustrate what contribution each has made to this end.

In addition to providing facilities for comparing our individual efforts, the poultry exhibit should be an opportunity to develop the industry as a whole. Indeed, very little has been done to this purpose. It is true that at the present time the various specialized farm groups have their own organizations which sponsor promotional activities, but it does seem as if the county and State fair could be utilized to a much greater advantage.

As has been stated, there now exists very little cooperation between the organized farm groups and the fair management. There is probably more need for a better understanding between them than any other single reform. It is my opinion that the success of the future fair depends upon this relationship. The very purpose of these exhibits is to promote the agricultural enterprises which these organizations represent. It is evident, therefore, that it is necessary to have their advice and cooperation in the planning of a program, if it is to be a success and serve the industry. I have constantly indicated to the various fair managements the necessity of delegating more responsibility among the specialized farm groups. If

these people are given to feel that they have a part in planning and promoting the fair program, a definite improvement will be seen both in the exhibits themselves and also in the attendance.

There is still another phase of the fair's activities which has great possibilities for development; that of producer-consumer relationship. We are not taking full advantage of the opportunity to develop this function of our exhibits. Some industries lend themselves readily to exhibit consumer appeal. This has been done more by your organization than any other that I can recall. The Winter Farm Products Show, sponsored by the Maryland Agricultural Society and held in connection with the Annual Meeting of the Farm Bureau, probably has more consumer appeal than any other exhibit held in the State. This same show may be cited also as what can be done when a farm group is given the responsibility of organizing and promoting the products of their industry.

Consumer contact is more important here in the East than it is in the West and mid-western states. Improved transportation facilities, modern farm machinery, and advanced methods of production have brought the products of the specialized farming sections on our markets at a price that threatens our whole eastern agriculture. It has created a real challenge which we are forced to meet. The most likely method of doing this is by meeting their commodities of mass production with superior quality. This does not mean only the process of producing quality, but entails also the education of the consumer to its value. The two must be considered together, however, because the incentive for production will follow the market's demands, creation of which is a responsibility of your organization and similar farm groups. It seems to me that the exhibits of your commodity throughout the State present excellent opportunities of consumer contact and education.

The benefits to be derived from our fair programs are dependent entirely upon interest and support given them by the industry groups and by visitors or patrons. The value of the exhibits are two-fold. They give exhibitors an opportunity to compare their produce and they also provide to observers a goal for improvement. The success of any fair or exhibit is judged, not necessarily from the number of people in attendance, but by the advancement that is reflected by the agricultural people of the community. Indeed, this is the very purpose of these exhibits.

The problem of farmer interest, which is such a serious one today, is made even more so by the fact that the fair's very existence is dependent upon it.

I think it should be realized that we must appeal to the farm people differently than a few years ago. They are much better organized now, and it is necessary to encourage interest and cooperation by groups rather than individuals. As a matter of fact, many of the farm groups themselves are sponsoring activities which parallel that of the county fair, indicating a lack of understanding between them. The very future of the county fair, as an institution for the development of our agriculture, will be determined by the extent to which they contribute to the promo-

tional efforts of farm organizations such as yours, because by doing so they are rendering direct benefits to the farmers that such organizations represent.

I think it is appropriate now to indicate what part your organization can play in the future development of the county fairs. You are interested primarily in the poultry and poultry products phase of these exhibits. It is to your benefit that they render to your industry the greatest possible service. If this is to be accomplished, the poultry program must for the most part, originate with the industry. I am sure that the fairs throughout the State will welcome your suggestions for the improvement of their activities and how they might be made more educational. There is an opportunity for each of the various poultry groups throughout the State to capitalize on their county fair as a promotional institution. If they will only evolve within their ranks the kind of a program that should best accomplish their needs, I am sure that the fair management will cooperate in executing it.

The building of attendance is another very important problem to which you should give consideration. Attendance is essential in order that the fair program may be properly financed, and it also reflects the value of the fair to your industry. Undoubtedly, an improvement of exhibits will help to accomplish this, but we cannot afford to develop the quality of them too far beyond public support. Our efforts should be directed, therefore, to plans that will give us sufficient interest from visitors to indicate a need for constant improvement. I am firmly convinced that we can no longer attract farmers by placing predominating emphasis on amusement features. We must give them something concrete that they can take home with them and apply to their farming operations. Likewise, we must demonstrate to visitors from the town and city the value of a quality product produced at a distance of only a few hours from the point of consumption.

As an illustration of the amount of emphasis that has been placed on amusements as compared to agriculture activities, I am going to cite from the report of one county fair last year.

This fair spent on amusements as follows:

Free Acts	$1,304.00
Harness Horse Racing	907.00
Other Amusements	277.00
	$2,488.00

A total of $2,488.00 as compared to $1,600.00 was spent for premiums on agriculture products.

In addition to this, I might show the amount of time given over to emphasizing their agricultural activities. Their program indicated that the judging of all agricultural exhibits was done between the hours of 10:00 A. M. and 1:00 P. M. on the first day of the fair. It is reliably reported that at this particular time there were not over one hundred

people present other than exhibitors. The program for the remainder of the week sounds like an advertisment from a circus or the local fire carnival.

I am glad to say that this Fair Association has made very definite improvement in their progress this year. It is hoped that the future will bring even greater changes.

Before concluding, I might indicate that the program of the State Fair Board for the poultry industry is not to be confined to the county and State fairs. There has been a need and a demand from your industry to enlarge the present winter poultry show held in connection with the Annual Meeting of the Farm Bureau. It is indicated that at this time of year poultrymen are in a better position to stage a demonstration of all their products. It might interest you to know that consideration is now being given to assisting in a much larger program this coming winter. The initiative of such an undertaking will have to originate in your organization. It will be up to you also to develop plans and assist in the organizing of exhibits. The type of program is entirely within your hands. You may make of it what you will.

This applies in a general way to opportunities offered by the fairs throughout the State. They are held for your benefit, but it is up to you to help make them a success.

SOME ECONOMIC ASPECTS OF CHICK PURCHASES BY MARYLAND POULTRYMEN

PAUL R. POFFENBERGER, College Park.

I would like to take this opportunity on behalf of the University of Maryland Experiment Station and myself personally to express my sincere appreciation to the poultry producers of Maryland whose cooperation has made our economic surveys and research program possible. Time and again, poultry producers have cooperated with the University and have given unselfishly their time, knowledge and experience to the subject being studied. We feel confident, however, that their time was well spent and only hope that the producers feel the same way and that the information contributed by each individual will benefit the industry of the state.

In discussing the subject assigned to me, I wish to approach it from five different angles: (1) The purely economic problems involved in purchasing of chicks in Maryland; (2) The cost of hatching chicks and its relation to chick purchases; (3) Income that Maryland poultrymen may accrue through cooperation with Maryland hatcherymen; (4) The psychology of chick purchases and why some Maryland poultrymen go to other states to buy their chicks; and, (5) Some problems of economic and social significance to the poultry industry of Maryland.

It is a well-established fact that practically everyone makes his purchases as economically as possible. Buying baby chicks is no exception; poultrymen want to buy their chicks as cheaply as possible and

get the highest quality chick for that particular price. Price is one of the most imporant items poultrymen consider in purchasing chicks. Many of the better poultrymen, however, consider the price of chicks in relation to quality rather than use price as the basis of purchase solely.

Chicks were purchased from Maryland hatcherymen last year for an average price of $9.60 per 100 chicks and from out-of-state hatcherymen for an average price of $11.61 per 100 chicks. Mortality of the chicks purchased from the two sources averaged 12.2 per cent and 16.1 per cent, respectively. Two-thirds of the chicks were purchased out of the state at an average price of $2.01 per 100 chicks more than the price paid for Maryland chicks, with a 3.9 per cent greater mortality of chicks purchased from other states.

Quality of chicks is very difficult to determine; however, pullorum-testing and mortality may indicate to a certain extent the quality of chicks. In Maryland, 89.6 per cent of all chicks purchased were blood tested; that is, the eggs were from blood-tested flocks, and 10.4 per cent were non-pullorum tested. The average mortality was 13.9 per cent and 22.7 per cent for pullorum-tested and non-pullorum-tested chicks, respectively. The average price paid for pullorum-tested chicks, with an average mortality of 13.9 per cent, was 36 cents per 100 chicks less than the price of $10.83 per 100 chicks paid for non-pullorum-tested chicks, with an average mortality of 22.7 per cent.

Of the total number of chicks purchased from Maryland hatcherymen, 84.9 per cent were pullorum-tested and 15.1 per cent were non-pullorum-tested; and of those purchased out of the state, 75.6 per cent were pullorum-tested and 24.4 per cent were non-pullorum-tested. Although the proportion of pullorum-tested chicks was 9.3 per cent higher in Maryland hatched chicks than out of the state hatched chicks, the producers paid $2.01 per 100 chicks more for the chicks purchased from hatcheries in other states.

What would the lower price and lower rate of mortality of Maryland hatched chicks over out-of-state hatched chicks mean to Maryland poultrymen in terms of dollars and cents? If we assume that this sample is representative of the state, there would have been a saving of approximately $300,000 to Maryland poultrymen, or $8.32 for each of 36,059 farms reporting poultry, if they had bought Maryland hatched chicks. I do not mean to advocate that all poultrymen should buy chicks from Maryland hatcherymen, but I do say that there should be some kind of reciprocity between states. Poultrymen in one state should not profit at the expense of poultrymen in other states.

Cost of Hatching Chicks

The cost of hatching chicks has a direct relationship to the price which poultrymen have to pay for chicks, provided the hatcheryman is allowed a fair profit for his work. There are certain costs in the hatchery industry which remain rather constant, such as, overhead, labor, selling cost, cost of containers, allowances of extra chicks and cost of breed improvement, but the cost of eggs, which amounts to a little more than

60 per cent of the total cost, varies greatly, depending upon the seasonal price of eggs plus a reasonable premium and the influence of hatchability upon the real cost of the eggs to the hatcherymen.

The first year's results of the hatchery study reveal that fixed costs incurred in operating a hatchery amounted to about $2.52 per 100 chicks hatched. The cost of eggs for the year 1936-37, averaged $4.47 per 100 chicks hatched. Let me illustrate how the hatchability of eggs will influence the cost of enough eggs to hatch 100 chicks. For example, the price of eggs is 36 cents per dozen and their hatchability is 75 per cent, then the cost of the 133 eggs necessary to hatch 100 chicks will be $4.00, but if the hatchability is only 60 per cent then the cost of the 166 eggs necessary to hatch 100 chicks will be $5.00. This difference in hatchability of eggs on that particular price made a difference of $1.00 per 100 chicks hatched and increased the cost of hatching day-old baby chicks 1 cent per chick. The difference in the cost of eggs influenced by hatchability increases proportionately as the price of eggs increases. Thus, the production of good hatchable eggs by breeders will enable the hatcherymen to sell chicks to the poultrymen at a lower price and at the same time receive a fair profit for his work.

Potential Income for Maryland Poultrymen

Every year Maryland hatcherymen are buying eggs from other states in relatively large numbers. Last year, about 40 per cent of the eggs purchased by Maryland hatcherymen were purchased from out of the state poultrymen. Approximately 450,000 dozens of eggs were bought outside of Maryland last year for hatching purposes at an average premium of 12½ cents per dozen, which amounted to $56,250 which should have been paid to Maryland poultrymen if they would have and could have produced quality eggs to warrant the additional price.

Maryland poultrymen also receive a premium for the eggs which they sell to hatcheries, but a much smaller premium, ranging from 5 cents per dozen to 12 cents per dozen depending upon the supply of and demand for hatching eggs. Out-of-state poultrymen receive an average of 8 to 10 cents per dozen more for their eggs than Maryland poultrymen. If Maryland poultrymen received the same price for their hatching eggs as out-of-state poultrymen, their income would be increased by approximately $54,500.

Naturally, the question arises—why don't Maryland hatcherymen patronize their own poultrymen? To this question, the answer is rather discouraging but one which warrants the consideration of our State Poultry Department and the Maryland State Poultry Council. The answer is simply this, and I'm being very frank, that the hatcherymen do not believe that Maryland poultrymen are producing eggs of equal quality for hatching purposes with those of other states and there is also a lack of confidence in the ability and integrity of many Maryland poultry breeders. Poultrymen, here is a real challenge, and the success of the industry will depend largely on the manner in which you meet this challenge.

Psychology of Chick Purchases

Now that we have discussed the attitude of hatcherymen toward poultry breeders, let us see what the poultrymen think about Maryland hatcherymen and why they do not purchase their chicks from them.

The following reasons were given by Maryland poultrymen for purchasing chicks from other states. These reasons, as well as all other statements in this report, do not represent the opinion of any one producer but rather the opinions of many producers combined inductively into general statements.

1. About 45 per cent of the poultrymen reported that chicks were of better quality and the price was reasonable for the quality received.
2. About 18 per cent indicated that they were well satisfied with chicks purchased in other states.
3. About 11 per cent of the people who purchased from outside of the state expressed a lack of confidence in Maryland hatcherymen and breeders.
4. The advertisements of out-of-state hatcheries appealed to about 7 per cent of the group who purchased chicks from them.
5. About 11 per cent of the poultrymen expressed numerous other reasons, and about 2 per cent expressed no reason for purchasing chicks in other states.

Maryland hatcherymen, as well as all other hatcherymen, must realize that more and more poultrymen are becoming educated to the fundamental principles of sound poultry husbandry and that they really want to get the full value for their money when purchasing chicks. A good rule for hatcherymen to follow would be to sell only quality chicks at quality prices. Furthermore, it would be safer and more profitable over a period of years, although perhaps an immediate monetary sacrifice, to sell no chicks rather than sell a low quality chick which may cause the poultry producer to lose confidence in his hatcheryman. Consequently, a large majority of his business would be taken over by a wiser and more responsible hatcheryman. Thus, it is quite evident that many hatcherymen jeopardize their entire business by over-zealousness to sell more chicks than their capacity adequately permits or by trying to outsell their competitors.

The poultry industry would be more progressive if hatcherymen would only hatch eggs coming from their reputable and approved flock owners rather than hatching chicks from eggs collected indiscriminately as to quality and from barn-yard flocks, of which many are only average or less than average quality stock, especially when there is a scarcity of quality eggs and the demand for chicks is high.

A large percentage of our poultry producers are not conscious of false economies in purchasing baby chicks. They are often attracted by the low price. Sometimes the chicks they buy are good and they experience a successful season, but only too frequently the chicks are of an inferior quality and in the final analysis cost the producer more than if he had purchased quality chicks.

Economic Problems Confronting the Buyer of Chicks

There are many problems confronting the poultry industry of Maryland, which are of economic and social significance to the welfare of the industry. Many of our leading poultry producers are cognizant of these problems and have made some attempt to correct them. The correction of the economic ills of the poultry industry is not a task for two or three poultrymen but rather commands the attention and action of our poultry specialists and a larger number of the poultrymen of the state.

I will only mention two of the more important problems at this time. Probably the most important problem confronting the poultrymen with special reference to buying chicks is the lack of cooperation between Maryland hatcherymen, the poultry breeder and the purchaser of chicks for broiler production and market egg production. If there was more cooperation among and more coordination of the different enterprises of the poultry industry, there would be not only a monetary saving but a force strengthening and building up the morale of the poultrymen.

Another important problem is the lack of advertising Maryland produced poultry products. The only opportunity for many poultrymen to learn where to buy chicks is from advertisements. Then, why should Maryland poultrymen be attracted by the advertisements of hatcheries in other states while our own local hatcheries may be producing chicks of equal or better quality?

A very brief sketch has been made of some economic aspects of chick purchases in Maryland. There are many problems confronting buyers of baby chicks for which no panacea has been offered, if there should be one. I shall feel well satisfied if I have impressed upon the poultrymen of Maryland the necessity of a long-time program of poultry improvement and efficient marketing under the competent leadership and guidance of the state poultry specialists in order that there may be harmony and progress in the industry.

EGG MARKETING OPPORTUNITIES IN MARYLAND AS A RESULT OF RECENT STUDIES

By Dr. S. H. DeVault

Head, Department of Agricultural Economics, University of Maryland.

The first problem in the marketing of eggs is to have a market and to supply it with the kind of eggs it wants. Maryland is favorably located to some of the best markets in this country; in a short time eggs can be transported to Baltimore, New York, Philadelphia, Washington, Boston, Pittsburgh, Wilmington and other markets. This favorable location has all but become a curse rather than a blessing as farmers have tended to ship all kinds of eggs with little regard as to grade or quality. The areas more distant from markets have by necessity learned to grade and pack their eggs and now are offering every opposition to Eastern producers. This presents us with a challenge.

Are we going to continue to lose our markets by selling our eggs as just eggs, or are we going to maintain a favorable position in our local Eastern markets. If we expect to maintain a favorable position in the local markets, we must supply them with eggs well graded and standardized, put up in attractive packages and backed by a guarantee of quality.

Grading does not mean elimination of everything but the best. It means separating the product according to color, size and quality and selling the various classes or grades according to their respective merits. Consumers demands vary according to their capacity to purchase; therefore, it is necessary to have eggs of different grades so that the person with a particular income may demand "U. S. extras," whereas the buyer with less to spend may desire a lower grade or cheaper egg. We are getting away from the idea that all eggs are alike.

The marketing of eggs is like a chain; on one end are good markets and on the other end are profits; between these two ends are the links which are called standard grades, standard containers, proper identification, sufficient supply and advertising. If we are going to stay in the poultry business, we must weld our links securely and properly; that is, hook good markets and profits together and then maintain the links in the chain.

The Department of Agricultural Economics of the University of Maryland Agricultural Experiment Station has made many studies relating to the marketing of eggs in this state. Several studies are now in progress. In 1937, we made a study to obtain some information which would indicate the desirability or undesirability of establishing production point cooperative egg auctions at strategic points in Maryland. This study covered the seasonal production of eggs in the principal producing areas in the State, the seasonal marketing of eggs, methods of selling, principal markets on which the eggs were sold, methods of transportation, marketing costs, prices received and general information in regard to local production, consumption and purchase of eggs.

The study was confined to two areas, namely, Baltimore, Harford, Carroll and Frederick counties in the Piedmont Plateau region, and Wicomico, Worcester, Caroline and Somerset counties in the lower Eastern Shore. In the lower Eastern Shore region, the surplus of eggs produced in the four counties above the quantity consumed in the counties was 5,287,467 dozens; in the four counties surveyed in the Western Shore region, the surplus of eggs above consumptive requirements in the counties was 6,542,173 dozens. These two regions represent the largest producing areas in Maryland and the quantity available for sale constitutes a large percentage of the total surplus eggs produced in the State.

In the Eastern Shore region, 56.4 per cent of the eggs were sold through wholesale merchants; 27.9 per cent to hucksters; 7.6 per cent to hatcheries; 5.7 per cent through commission merchants; 1.7 per cent to retailers; .4 per cent to hotels and restaurants; .2 per cent to local stores; .1 per cent direct to consumers.

On the basis of the farms surveyed in the Western Shore area, 30.7 per cent of the eggs were sold through wholesale merchants; 29.3 per cent to hucksters; 19.8 per cent direct to consumers; 14.9 per cent to retail merchants; 1.8 per cent to hotels and restaurants; 1.5 per cent to local stores; 1.2 per cent to hatcheries; .8 per cent through commission merchants.

Of the eggs marketed in the Eastern Shore area, 70 per cent went to the New York market; 11.7 per cent to the Philadelphia market; 10 per cent were sold locally; 5 per cent went to the Camden, New Jersey, market; 3.3 per cent to other markets, such as Trenton and New Brunswick, New Jersey, while none of the eggs were reported as going to the Baltimore market. Most of the eggs in the Western Shore area were reported as going to the Baltimore market.

Based on information secured in this study, indications are that egg auctions might be successful if located near Westminster in the Western Shore area and at some point on the Lower Eastern Shore. Farmers would have to improve certain practices to assure the auction of getting good quality eggs. Farmers would probably get a net return somewhat above what they are getting now by marketing through the regular channels.

A study has recently been completed by the Department of Agricultural Economics as to whether or not it pays to grade eggs in Maryland. This study included 15 producers in Baltimore and Harford counties who have been selling their eggs to a prominent egg distributor in Baltimore on a U. S. Government graded basis, and a group of 15 farmers in the same locality with similar production methods who have been selling their eggs on a non-graded basis to hucksters, retailers, wholesalers and direct to the consumer. I do not care to go into the details of this study at this time, but shall report at some later time on the results of this study. The study does indicate, however, that it pays to grade eggs of good quality, but it is questionable whether it pays producers to sell low quality eggs on a graded basis. The study further reveals the interesting fact that size as well as quality influences the price producers receive for eggs. Since 1933, considerable progress has been made in the selling of eggs on a graded basis. Not only have more eggs been sold on a graded basis, but more and more eggs have been going into the higher grades.

Another study which is in progress is the Marketing of Eggs in Maryland, With Particular Reference to the Baltimore Market.

Survey of Retail Merchants in Baltimore

During the past year and one-half, the Department of Agricultural Economics has been making a very detailed study of the egg marketing situation in Baltimore. While this study is in progress and will not be completed until about July, 1939, certain tabulations have been prepared which are very interesting and reveal something of the egg marketing problems in Maryland, particularly as they relate to the Baltimore market. These figures are preliminary and are subject to revision later.

Our survey included 256 retail stores in Baltimore, 27 wholesale dealers and jobbers and 5 meat packers. The survey of the retail stores indicates that the retail merchants secure about 48 per cent of their eggs from wholesalers and jobbers and about one-quarter from farmers. The rest of their eggs they purchase from meat packers, hucksters, commission men, etc. Farmers and hucksters supply about 35 per cent of the eggs.

A little over 62 per cent of the eggs handled come from nearby producing territory and about one-third from the West. Of the eggs handled by the retail merchants, about 78 per cent were fresh and 22 per cent cold storage eggs; 13.4 per cent of the eggs were graded and 86.6 per cent were non-graded. Grading here does not mean U. S. Government grading, but simply that the eggs were sorted as to size and color, with the real low quality eggs being removed. According to the Maryland law, eggs that have been held in refrigeration at a temperature at or below 45° F. for 30 days or more are classed as cold storage eggs. Apparently, however, eggs that have been in storage for a month are sometimes sold as fresh. This undoubtedly accounts for the fact that a relatively high percentage of the eggs sold by retail merchants were classed as fresh. Strictly speaking, the percentage of eggs that are fresh would be considerably lower than the 78 per cent reported.

About 61 per cent of the eggs were sold loose; 32 per cent in plain cartons; and 7 per cent in branded cartons.

Most of the retail merchants purchase their eggs once or twice a week; 48.8 per cent reporting that they purchase twice a week and 38 per cent, once a week.

About 41 per cent of the merchants hold the eggs in their stores 7 days or more; 45 per cent, 4 days; 13 per cent, 3 days; and about 1 per cent, 2 days or less.

The surprising thing is that only one-third of the merchants reported that eggs were held in their establishments under refrigeration; 13 per cent reported that the eggs were stored in a warm place; and about 53 per cent reported that the eggs were held in a cool place. By being held in a cool place is not very significant for the simple reason that this means that the eggs were in a place in the store out of the direct rays of the sun, but were exposed to the warm atmospheric condition of the establishment.

Retail merchants determine the quality of their eggs very largely on the reputation of the dealer. Some of them judge quality by the price of the eggs.

In the Baltimore market, according to our retail survey, there is a preference for the white eggs, over two-thirds of the merchants reporting that consumers prefer white eggs; 21.5 per cent had no preference with respect to color. There was a preference for the large eggs over medium eggs and a decided preference for the large and medium eggs over the small eggs of similar quality.

Nearly 81 per cent of the retail merchants reported that their customers prefer to purchase eggs loose and only 19 per cent prefer the packaged eggs. There was no preference on the quality of eggs, since about 50 per cent of the people desire high quality eggs and 50 per cent low quality eggs. Price was the chief factor here.

Survey of Wholesale Dealers and Jobbers in Baltimore

About 69 per cent of the eggs handled by wholesale dealers and jobbers are received directly from country points, while 32 per cent are obtained from other Baltimore dealers.

Of the eggs that wholesale dealers and jobbers buy from other Baltimore dealers, 88 per cent are purchased through brokers; the others come primarily from commission men and meat packers.

Of the eggs received from country points, about 36 per cent are supplied by hucksters; 27 per cent by wholesalers; 14 per cent by farmers direct; and about 11 per cent come from country shippers. Farmers and hucksters supply direct 50 per cent of the eggs.

Apparently, the trend is towards outright purchase of eggs on the part of wholesale dealers and jobbers. Our sample survey indicates that about 79 per cent of the wholesale dealers and jobbers purchased their eggs outright and that only 20 per cent handled eggs on a commission basis.

Sixty-one per cent of the eggs handled by wholesale dealers are held under refrigeration. The average length of time held at the warehouses varies from 1 day or less to 10 days or more. A very large percentage of the wholesalers report that they hold the eggs for three days or over.

Conclusions in Regard to Methods of Handling and Selling Eggs

(1) Eggs should be gathered and marketed regularly. The average producer in Maryland sells his eggs once a week to hucksters, country stores or other purchasers; probably a day or so elapses before these eggs are sold in the market. Utah eggs are about one-half as old as Maryland eggs when they are placed on the market. Eggs coming from Utah and the northwest can be put in the New York market in about four or five days. The producers in Utah gather the eggs six times a day, send them to a grading station, have them graded that day and they are shipped the next morning.

(2) Eggs in Baltimore are sold very largely on the basis of current receipts. Practically no grading of eggs is done in this market except by a few dealers. Until eggs are produced under proper conditions and sold on a graded basis, producers can never expect to realize the greatest profit from eggs.

(3) Producers should sort their eggs by color, size and quality, and when they are not selling on a Government graded basis, they should candle the eggs to remove the bad eggs and those with blood and meat spots.

(4) Producers should improve their holding and handling facilities in order that the eggs may reach the market in the best possible condition. The average price received is influenced by the quality of the eggs.

(5) Many producers could probably increase their income from eggs if sales were made on a U. S. Government graded basis, especially as the consumer demand for high quality graded eggs increases.

(6) Eggs should be sold regularly and as soon after being produced as possible. They should be held on the farm at a cool temperature, kept under refrigeration on their journey to market and be held under refrigeration from that time until they reach the consumer's table. Our studies in Baltimore indicate that eggs are not held at the proper temperature. According to a study made by the Missouri Experiment Station, an egg when laid has a temperature of 106.7°. It takes 12 hours to cool them to a controlled temperature of 55°.

(7) It would seem desirable that egg producers in Maryland should form local associations for the receiving, grading and selling of their eggs. In Denmark, there are something like 60,000 poultry farmers who belong to the Egg Export Association. It includes over 500 egg collecting circles. About 15,000,000 pounds of eggs and poultry are sold annually. Each producer stamps each egg with a registered trade mark. They agree to deliver every egg laid except those used on their tables to the local circles and every time a producer slips in a bad egg, he pays a fine of $1.38. The result is that the eggs are uniformly good and command the highest price on the market.

By having assembling plants and shipping to markets from outlying areas in large quantities, the transportation cost should be lowered. In some sections where milk trucks are delivering milk daily to local markets, it may be possible to arrange to ship eggs along with milk.

Our study indicates that a large percentage of the eggs in Maryland are sold in bulk. It would seem to me that until eggs are put up and sold in some kind of cartons under a common brand or trade name that Maryland egg producers can never expect to build up a high reputation for their product.

(8) The consumer should be educated to appreciate quality eggs. As the consumer demand for higher quality eggs increases, the greater will be the return to those farmers who produce and sell high quality eggs on a graded basis. When consumers are able to purchase a graded product and secure the quality for their particular need, this will then increase the use of Maryland fresh eggs, particularly for table use.

(9) The competition in the marketing of eggs is very keen. The Western egg producers who have an abundance of cheap feed, and exercise the utmost of care in the production and selling of the eggs, are able to ship their eggs clear across the continent and place them on our Eastern markets in direct competition with our nearby producers.

(10) Effort should be made to increase the consumption of eggs. The per capita consumption of eggs in Canada is almost double the consumption in the United States. The consumption of eggs in the United States is about 17 dozens per capita. Farm consumption is 23.3 dozens and urban consumption is 13.3 dozens. The consumption of eggs both in the cities and on the farm fluctuates with the price of eggs. When egg prices are low, more eggs are consumed.

TRIALS AND TRIBULATIONS OF PRODUCERS' MARKETING METHODS IN THE NORTHEAST AND OBJECT LESSONS FOR MARYLAND POULTRYMEN

By JAMES M. GWIN, University of Maryland.

Before discussing my assigned topic concerning marketing methods, I would like to use a portion of my allotted time to show in a general way present day poultry products marketing conditions in Maryland as compared with other Northeastern states.

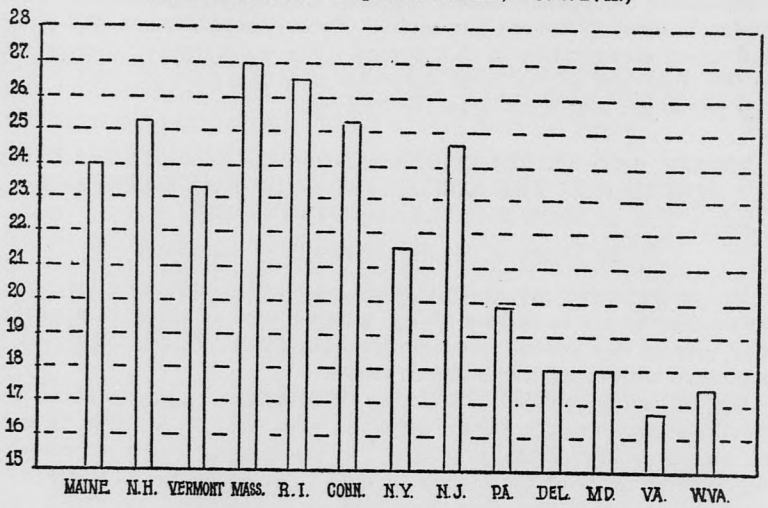
We will all agree that the quality of Maryland eggs can stand considerable improving; however, actual surveys have shown that it is by no means as low as many believe. In the largest and most complete survey ever made of the quality of eggs arriving on the larger eastern markets, it was found that Maryland eggs compared favorably with those from other Northeastern states. The survey consisted of six separate inspection tours made over a period of two and one-half years. Maryland stood in sixth place in comparison with the other states of the union, at the conclusion of the survey. On one occasion, the quality of Maryland eggs was next to the best found on any market.

If Maryland eggs are of this quality when delivered to the largest markets in the east, it is logical to assume that Maryland prices should occupy a similar position. Unfortunately, this is not the case. The best statistics available show that Maryland egg prices consistently rank among the lowest three states in the Northeastern group and frequently occupy the bottom position. According to the most recent United States Department of Agriculture figures, the average Maryland egg price during the month of May, 1938, was 18.1 cents per dozen as compared with an average price of 22.5 cents for the other twelve Northeastern states. Similar information on an annual basis for the past several years has shown approximately the same differences.

Any form of analysis of these figures will indicate a definite weakness in Maryland's marketing methods. It is of interest to note, however, that groups of progressive poultrymen are at work in several sections of the state trying to solve this problem, therefore, the remaining portion of this talk has been prepared to offer some assistance to those groups whose efforts we hope will lift the Maryland egg price structure to the point to which it belongs. In order that Marylanders may profit to the fullest extent by the mistakes and experiences of our neighbors, the adverse side of the picture is presented together with the more promising angles.

Prices Received for Maryland Eggs During May, 1938, Compared With Other Northeastern States.

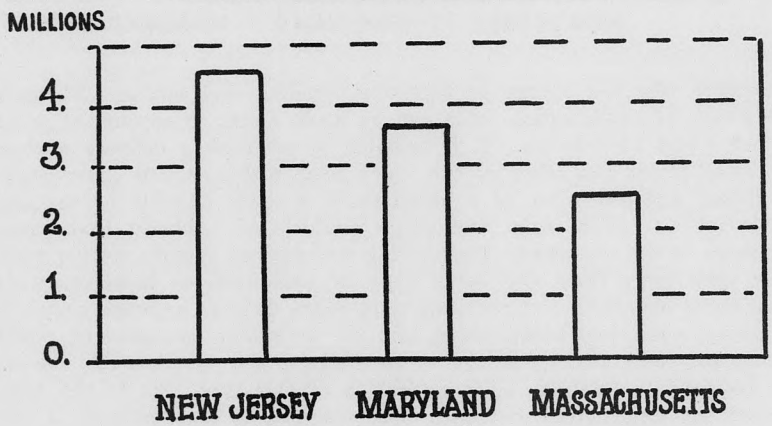
(From June, 1938, "Crops and Markets," U. S. D. A.)



Reports from the Northeast Egg and Poultry Marketing organizations that frequently become feature articles in many of our rural publications may create in the minds of many of you the impression that the establishment of any type of producer marketing organization is an assurance of success. Results of the past decade have shown that this is not the case and that the successful Northeastern egg and poultry marketing organizations of today have required much better than average thought and effort to see them through to their present position. Among the associations that are today providing their producer members a truly beneficial marketing service are many that have gone through a difficult organization struggle. An example of the point in question may be found in the following which is quoted from an early historical report of one of our now successful Northeastern cooperative egg marketing organizations. "Prices at the initial sale were disastrous. Many can still recall that our President . . . drove around in his car the balance of the afternoon trying to regain his equilibrium after losing $21.00 on the first sale as a reward for his efforts. Dissatisfaction was rife and threats to quit were quite the rule. An emergency meeting of directors was called to discuss the advisability of a second sale or the feasibility of admitting defeat. With a thankless task before them and unjustified criticism as a probable reward, the directors voted to keep up the fight and put the association across. Constant, tireless effort kept a small loyal group of producers encouraged to continue and succeeding sales showed considerable improvement. The first month's operation showed sales of 1,126 cases of eggs with a total excess over New York prices during the same month of $226.14, in spite of the fact that producers

lost $70.91 on the opening sale." From the Treasurer's report of the same period the following is quoted: "In those first hectic six months it was only the combined sacrifices of all connected with the auction that kept the cart moving. . . . The free labor contributed by directors in buying, writing up sales and wheeling out cases of eggs, alone made it possible to keep ahead of the sheriff. . . . At times, the doom of the association seemed almost sealed. Every Board meeting was followed by numerous sleepless nights. During one week alone in the spring of 1933, thirty-six association checks rebounded into the laps of producers necessitating payment of some $96.35 in protest fees. . . . The producers who stuck so loyally to the auction during those black days deserve a rich reward. Your treasurer is reminded of several *producers who came to the association with protested checks in one hand and another case of eggs under the other arm.* Faith like that has made our marketing organization what it is today and has inspired the directors to keep fighting." Today that association is housed in a new $40,000 building, is doing over a million dollars worth of business per year and has recently returned a sizeable dividend to its producer members.

Estimated Number of Eggs Produced on the Farms of New Jersey, Maryland and Massachusetts in 1937.

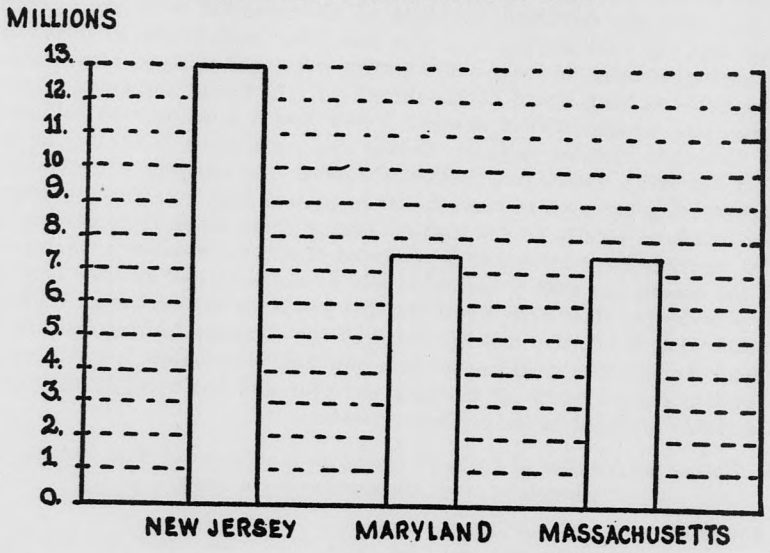


Kinds of Producer Marketing Organizations

There are three main kinds of producer marketing organizations operating in the Northeast at the present time: the pooling associations, the auctions and the shipping associations.

The Pooling Cooperatives—The pooling associations consist of a group of producers who establish their own receiving and distributing plant. Their yearly membership agreement requires that they ship to their association the entire output from their flock, except the eggs used for hatching and home consumption. The individual producers are paid according to the quality of their eggs. The association employs its own

Estimated Value of Eggs Produced on the Farms of New Jersey, Maryland and Massachusetts in 1937.



manager who has charge of receiving, grading and selling. Through this type of organization sales can be made direct to consumers or to jobbers and wholesalers. It is possible to establish a delivery system to retail stores and other outlets which require this service. The establishment and promotion of a brand name is made possible by the distribution of carton eggs and other methods of publicity that carry through to the consumer. The pooling associations usually receive more for their eggs than any other type of organization; however, their additional operating cost resulting from extra delivery expense, complete grading, additional bookkeeping, and the necessary extension of credit often absorbs a sizeable portion of the extra profit. Considerable volume is required to establish an organization of this type, due to the comparatively large initial overhead. The examples of organizations of this kind that are operating in the Northeast indicate that once they are properly established they become quite secure, increasing in their effectiveness as their brand name becomes better established. There are two pooling cooperatives operating in the Northeast in their fifteenth year.

The Auctions—The egg and live poultry auctions which have been operating successfully for the past seven years, provide a plan of low cost selling which meets many of the buyers' requirements. Most of the auctions have started by selling one product, either poultry or eggs, and have later added the other one.

The first eastern egg auction was started in July, 1930. It failed for lack of proper producer support after it had created the most favor-

able egg marketing conditions the producers of that area had ever known. In August of the same year, another auction was started in a different section of the same state. Profiting by the experiences of the first group, these producers remained loyal to their association through the period when temporary high prices from other sources threatened the life of the auction. It has since been found that most all of the auctions have to pass through a testing period that comes after the stimulus, furnished by the initial interest, has died down and when other merchandising agencies begin a counter charge against the serious competition created by the auction.

In view of the fact that auctions do not compel their members to market all or any part of their product through the association, they have appealed to producers which has resulted in a large membership at the start. This same condition, however, has presented the auction with the problem described above and has subjected them to tests that only good management and producer loyalty can withstand.

In selecting a location for an auction market, it is necessary to consider the possible outlets as seriously as the source of supply. It is true that many auctions ship to distant markets large quantities of eggs which have been purchased by telephone bids. These sales are very helpful but they constitute only a part of the competitive buying that has given the auctions their exceptional price advantage.

The Cooperative Shipping Association—The cooperative shipping association which will be explained in detail by Mr. Burr, consists primarily of the banding together of a group of producers who establish a uniform standard for their product. They ship directly from their farms to the distributing agencies located in market centers. The large volume of reasonably uniform quality product resulting from this combined effort provides the association with a bargaining power which enables them to secure substantial market advantages.

The outstanding advantages of an organization of this kind are the low overhead costs and the ability of the organization to provide suitable market outlets for producers distantly located from markets. Its main disadvantage is maintaining quality control which must be kept on a high standard by each individual member or the bargaining power of the entire organization is harmed.

The recent interest that has been shown in this type of marketing agency and the results of Dr. DeVault's egg surveys, indicate that Maryland producers in some sections of the state may find in this type of organization advantages which merit further investigation.

The Maryland egg price structure will not be raised materially until producers by cooperative effort provide conditions that place their eggs in more competitive channels. At the present time few eggs of uniform quality are assembled at any one point in Maryland in volume large enough to attract buyers interested in storage or large scale distribution.

The individual producer is faced with the problem of selecting a marketing plan adaptable to his own needs. In making this selection he

may decide upon any plan from direct consumer contact to supplying ungraded eggs for wholesale distribution. His decision will depend to a large extent upon his location and his production methods. He must be ever mindful of the danger of sacrificing to his selling organization time that could be more profitably spent on production activity. In due time he may discover that instead of competing with other good producers in the distribution field it is more profitable to unite with his producer competitors into some form of marketing organization that will select one person to handle the grading and selling of their product. By this method the individual producer will help decrease competition, improve the bargaining power of all and provide more time for production activity.

WHAT KIND OF EGGS DO BALTIMORE HOUSEWIVES WANT?

MRS. CHARLES T. FOWLER, National Housewives, Inc., Baltimore, Md.

Mr. Chairman, Members of the Committee, Ladies and Gentlemen:

It is a pleasure to be with you on this dear old Eastern Shore. You ask me to tell you the kind of eggs the housewife really wants. That is so easy I wonder you haven't guessed it.

The Maryland housewives feel that the Maryland State Poultry Council will always appreciate constructive criticism. The complaints I bring before you tonight, we feel, if corrected, will go a long way toward making the poultry industry one of the greatest, if not the greatest of food industries.

Maryland housewives want good quality, fresh eggs, produced by Maryland producers. Now that the poultry producers are organized, we feel sure there will be a big improvement in the Maryland egg market.

In previous talks I have made you familiar with the unfair trade practices housewives must tolerate when purchasing eggs. As you can recall, a Maryland Fresh Egg Law was passed and signed by the Governor, but Maryland is too poor to spare the money for enforcement. This doesn't make sense when we read of the wasteful extravagance of city and state politicians.

We, the housewives, are much concerned about the World's Poultry Congress. When we expect guests, we make sure that our homes are in perfect order. With the World's Poultry Congress on its way, the eyes of the world will be focused on the American Poultry Industry. Let us begin with the hotels. Do they serve good quality, freshly killed poultry. They do not. They serve tasteless (except for entrail taint), cold storage poultry. This unfair practice should be corrected before the guests arrive for the Poultry Congress.

Producers in every state should supply their hotels with the best of freshly killed poultry. Distribution of so perishable a product should be controlled absolutely by producers. I think you will be interested to know that our Market Committee has made many tests of food products. Members who score high in food intelligence conduct these tests, which are fair and unbiased. The food products are cooked in sealed glass con-

tainers. Not a particle of flavor can escape. The shrinkage of stale products in cooking raises the price greater per pound than the fresh product. The stale product exceeds the price of the fresh, because of less servings, and lack of flavor. The tasty gravy from a fresh product augments its serving possibilities. Recently, we have been able to convince some hotel owners of this important fact; if they serve freshly killed poultry, their profit will be greater, and their guests more satisfied to pay $2.00 per plate for banquet meals.

No doubt you are familiar with the legislation recently passed, giving the Federal Trade Commission jurisdiction over control of false advertising of food. This legislation can be a big help in cleaning up conditions in the poultry retail market.

I have one other thing to tell you about—The Consumer's Council of Baltimore. It was organized in September of last year. It has a membership of approximately 156,000. On February 24th the Council was asked to send two delegates to a Consumer Convention held in Washington. Miss Sarah Hartman, the president of the Council, and I attended. There were delegates from every state. I was surprised at the momentum of the Consumer Movement sweeping the country. Five members were selected to discuss consumer problems with President Roosevelt. The present monopoly probe is a direct result of that convention.

The Consumers' National Federation of New York City submitted a proposal for a Consumers' Agency in the Federal Administration. This proposal has the approval of both labor organizations. This agency will perform for the consumer the same service that the labor board does for labor.

BRADCO'S EXPERIENCES IN OPERATING AN ECONOMICAL AND EFFICIENT EGG MARKETING COOPERATIVE

G. M. Burr, President

Bradco Egg Producers' Cooperative, Tunkhannock, Pa.

The actual beginning of the Bradco was in rather a small way, as 12 poultrymen, representing about 8,500 birds met in November, 1930, to discuss some plan of selling their eggs so they might receive more for them. At that time, our territory seemed to be more or less out of range in egg selling. We were a little too far away to be contacted by New York buyers, except by mail, and there were no large centers near where the eggs could be marketed; so the practice at that time was for a producer to ship to one receiver a little while and then change to another, as everyone felt that he could get a better price in that way, and it really did seem to be so.

Prices in this section at that time, ranged from 2 to even 4 and 5c below the market quotations on Specials in New York, the producer never knowing what he would get for his eggs until he received his check. Along with this, there was the loss of a check occasionally, because in shipping indiscriminately, you were bound to pick up a receiver once in a while who was willing to take advantage of you.

These conditions laid one of the very best foundations for forming an organization of this nature, so that there were about 130 members who sold in that first year over $89,000 worth of eggs.

Membership

In building our membership, no actual canvass for members has ever been made. We have at times held meetings in some localities where there was interest, explaining the work of the Association, but no one has ever been urged to become a member, because we felt if the decision was left entirely with the prospective member, the results were better.

Contracts

We have no formal membership contract of any kind. We do ask a member to ship all of his "Specials," or large eggs, through the Association, but no action is taken if he ships to some one else, which some members do occasionally, but usually they are shipping through the Association again in a short time. All members are at liberty to sell the smaller sized eggs as they see best, if they do not want to ship them. We do have a membership card we ask a prospect to sign, on which he agrees to abide by the rules of the Association, and also states the number of birds he owns, and whether he has white or brown eggs, and his name and address.

Joining

As a producer asks to become a member, by presenting a membership card and the usual fees, he is assigned the next serial number in order, and given the name and address of the receiver in New York to whom he shall ship his eggs. He is not permitted to change receivers without the sanction of the Marketing Committee and many of our members are still shipping to the first receiver to whom they were assigned.

Labels

The Association has a copyrighted label that is purchased in lots of 100,000, which are to be used on both ends of the case when it is shipped. They are sold to the producer at one-half cent each, which nets a small income towards the expenses of the Association. In a space provided on this label, the producer places his serial number that was assigned to him, and this is the only producer identification that follows the case to the retail buyer in New York City, but many buyers become acquainted with certain numbers of producers and request their eggs each week in their purchases.

Reports

At the end of each month, each producer is required to report to the Secretary on a postal the number of cases he shipped, and the gross amount he received for them, in order to have a check on what the receiver in New York receives.

Packing

All the eggs sold are packed on the farm by the producer, and are not rehandled or inspected at a central station. Rules are drawn up by the Marketing Committee for packing and handling to insure as near a uniform pack as possible. At times it is necessary to see new members personally before they really get the idea, but in general the results have been satisfactory enough so that a large portion of the eggs received are sold without opening by the receiver in New York, where, of course, the buyer is familiar with producer numbers.

Complaints

If a buyer comes back with the statement that his purchase was not up to what it should be in quality, then the next shipment will be inspected by the receiver, and a report made on his trouble on a blank furnished by the Association for that purpose, when it is necessary for some one to check with this producer on his quality. In most instances, the trouble is due to some one being a little careless, or possibly other work has crowded in so that the eggs did not receive their usual attention.

Trucking

While I do not have any definite means of knowing, I presume that 90% of Bradco eggs are carried to New York by trucks. They are usually picked up at the farm in small trucks and then transferred to large trucks carrying from 200 to 300 cases, which make two trips a week with three trips in the flush season.

One thing that we have found to our disadvantage was the fact that we do not control the trucking of our eggs. This is all by individual arrangement between the producer and trucker as to charges, which average around 50 cents a case, and include the return of an empty case furnished by the trucker.

As the various truckers deliver their loads to the receivers in New York they are paid the transportation charges, which, in turn are deducted from the returns to the producers.

Territory

The original idea, of course, in forming the Bradco was for an outlet of eggs for Bradford County of which the name is an abbreviation, but at the present time we have members in 14 counties of Pennsylvania and four of the border counties of New York State. Limiting the territory is at present being considered, because we find that as we spread over greater area, our costs per case for handling also increase in proportion.

Incorporation

In February, 1937, the Association was incorporated under the Pennsylvania Act of 1929, which permits the issuing of stock if desired, of which there is no need at the present time. To comply with this law, and

get certain advantages given under it, the $1 membership fee is represented by a share of stock that is not transferrable, and bears no dividends, but is redeemable if presented to the Board with that request, if a producer wishes to discontinue his membership.

Directors

Under this incorporation, the Association is managed by a Board of nine Directors, three of whom are elected each year for a term of three years, at the Annual Meeting of the members in November. These Directors elect from their number a President, Vice-President, Secretary and Treasurer, whose duties are those usually followed in these offices. This Board of Directors meets monthly, or more frequently if the occasion demands, to care for the work of the Association.

Marketing Committee

The Directors also elect from their number a Marketing Committee, whose acts, of course, are subject to the approval of the Board of Directors, but who arrange for the sale of all eggs in New York, investigate and recommend all receivers who are permitted to handle our eggs, check on any differences between members and receivers; in fact, a large part of the work of the Association is handled by them.

It is necessary at various intervals for some of this Committee to contact the receivers in New York to adjust any little differences that may arise. They also meet with the receivers in September of each year to arrange the next year's schedule of prices, effective October 1st of each year.

Prices

Our present price agreement on white eggs is a 2½c premium on what "Specials" are quoted on the New York Exchange, and 1c premium on Mediums, with top market for small sizes. On brown eggs the premium is 1c. These prices are paid from July 1st until December 1st of each year. The balance of the year there is a 1c premium on "Specials" with top market on all others.

Grading

As mentioned before these eggs are graded on the farms, many producers using the Perfection Egg Graders, while others use scales. These eggs are graded to the following weights:—

Specials	23 oz. and over	45 pounds net case
Mediums	20 to 23 oz.	41 pounds net case
Pullets	18 to 20 oz.	34 pounds net case
Peewee	Under 18 oz.	

Brown eggs graded 1 oz. to the dozen heavier.

Finances

The Association is financed from two different sources, one the members of it and the other the receivers who handle the eggs. The member-

ship pays annual dues of $2 each which, of course, is added to the membership fees and the returns from labels. This last year amounted to a total of $1,591.00.

The receiver pays a minimum charge of $50 each which gives him the privilege of receiving up to 2,500 cases of eggs, if he so wishes. All above that amount that he gets he pays a straight 2c a case for, so that this amounted last year to $1,144.34. In this way we are able to hold down the costs to the member to a much lower figure than otherwise.

Totals

The Association at the present time has about 420 members who have around 300,000 birds. Last year there were sold through the Association 56,831 cases of eggs having a value of $505,726.00.

The total cost in handling these eggs through the Association was 4 4-5 cents a case or about $2,700.

These were handled through 12 receivers in New York City.

RESULTS OF OUR EGG MERCHANDISING DRIVES

ROY GOLDHEIM

Read Drug & Chemical Co., Baltimore, Md.

The hen is the greatest natural advertiser the world has ever known. Her cackle, one of the first broadcasts ever made, says: "Here's a strictly fresh egg. Come and get it!"

Our egg campaigns followed just about the same lines. We said: "Here are strictly fresh eggs prepared in an appetizing manner, prices are low for the quality offered, they are served to you in pleasant air-cooled stores in most appetizing recipes; 'Run Right to Read's'."

In the summer of 1937, the International Baby Chick Association held its annual convention in Baltimore. We, at Read's, felt that a special drive or concentration on Eggs and Egg Drinks would be very appropriate just at the time this convention was being held. We planned window displays, advertising, and soda fountain backbar displays and signs. We issued special instructions to all our 42 soda fountains to promote the sale of eggs for this 9-day period particularly.

The result of this activity was an increase of over 100% of our egg consumption for the period of the drive, of which a very substantial proportion was held after the drive was over.

We had a meeting of all our soda employees at which Mr. Hicks, secretary of the International Baby Chick Association, Dr. Jull, and Professor Rice of University of Maryland spoke; and Professor Rice gave us a very interesting and instructive talk on the care and handling of eggs and manner in which a strictly fresh egg could be told from one not quite so fresh. He showed us how eggs were candled.

We offered special prizes to our soda dispensers who sold the most eggs and kept them informed of the progress of the drive through special bulletins from the office. We found that the outstanding item

on our drive was a Fried Egg Sandwich which was served on a flat roll which had been cut in half and the egg spread over both halves. This was eaten with a knife and fork as a regular meal would be, and looked and was more appetizing than the ordinary sandwich which is eaten as a sandwich. We found that a great many sales were made on this that would normally have gone to other sandwiches of meat, cheese, etc. In addition to that, people who did not want a regular hot meal and still did not want a cold sandwich, ordered this hot Fried Egg Sandwich. The price was 15c which represented a very good value.

The next best item was a Chocolate Bracer which was really a Chocolate Milk Shake with an egg in it.

This sold at 20c instead of the 15c price of the chocolate milk shake without egg. We discovered quite an interesting point in sales psychology in the sale of this drink. Ordinarily, the dispenser would say to a chocolate milk shake customer: "Shall I put an egg in this?" That, we found to be effective in only a relatively few instances. However, when the dispenser held up an egg in each hand in full view of the customer and said: "Shall I put one egg in this or two?" The customer very frequently said: "Only one." In other words, we gave him a choice between one egg or two eggs instead of giving him a choice between one egg and none. Of course, this won't work all the time, but it does work in a sufficient number of cases to make it worthwhile.

The one big edge that the Chain Drug Store has over most other establishments which serve eggs is that we have a trained sales force, we do not have "order takers." Our people really sell, they have to sell. We have to do a certain amount of business to pay our high rents and high overhead, and incidentally, you will be glad to know, the salaries we pay our soda fountain people are considerably higher than the average in the industry. Because we do have this trained sales force, we can get a story across to the consumer quickly and in the form it should be in whether it is an egg in your drink or cantaloupes are ripe, or whatever it may be our sales force is continuously selling the consumer.

Frankly, we are not satisfied with ourselves when a customer comes in and just has a cup of coffee; of course, it is served to him courteously and we are glad to have his business, but we make an effort, tactfully and pleasantly, to sell him something else. It may be a piece of coffee cake, or it may be a fried egg sandwich. This trained sales force is on the job 365 days of the year. It takes hold of an idea and goes to town on it. It certainly helped us sell eggs on these two drives.

A report was made of the success of our egg drive at the meeting of the National Association of Chain Drug Stores held in New York at the Biltmore Hotel, September 14th. Partly as a result of this and of contacts with the various Poultry Associations, the National Association of Chain Drug Stores, comprising more than 3,000 individual soda fountain operatives, put on a concentrated Egg Drive all over the United States, April 11th to May 7th, 1938. Of course, we joined with this

excellent promotion, and because we have learned many things from our past drive, were able to do a very much better job this year than we did last year. We have run into a great deal of trouble in trying to perfect a suitable window display in 1937, and finally licked the job in 1938.

One of our most effective windows showed the picture of a farmer in the background with a basket of eggs in his arm and several illustrations of hens. Across the back in foot high letters was the wording "We serve only day-fresh eggs." The lower and front part of the window was divided into two large displays of eggs, white and appetizing-looking. In the center was a large sign reading as follows: "Eat Eggs for more vitality. We serve them prepared the way you like them at our fountain." On one side of the window was a large sign which gave the menu of our egg servings as such and on the other side was our menu showing egg drinks. These included Fried Egg Sandwich, Fried Egg and Sliced Tomatoes, Fried Ham and Eggs, Egg Salad, Sliced Hard-Boiled Egg and Sliced Tomato, Egg Salad platter, Ham and Egg Omelet, Scrambled Eggs and Cream. The Egg Drinks included, Chocolate Bracer, Pep Cocktail, Egg Phosphate, Egg Lemonade, Egg Milk Shake, all flavors, Egg Malted Milk Shake, Egg Chemm Malted.

We use only strictly fresh premium eggs at our soda fountains. We believe it is smart to buy the best obtainable. We think more of getting our customers to patronize us continuously, to come back and back to our soda fountains, than we do of a particular profit on an individual serving. It is our belief that we make more net dollars at the end of the year if we give the best quality foods and drinks and charge reasonable prices for them. If any of you, ladies and gentlemen, have been to Read's drug store particularly at noontime, you will know just what I mean. We usually have more customers at that time than we can properly handle. Because of this, we are constantly enlarging the size of our soda fountains and our stores; that, of course, means that we sell and dispense more farm products, more products of all kinds to our customers.

The amount of eggs that Read's or, for that matter, all the drug stores in the country can sell, is not one, two, three next to the amount of eggs that the grocery stores sell for home consumption. That, of course, we know and do not make any claims to being the major factor in the distribution of eggs from farmer to consumer. We are just a small cog in the wheel trying to do the best job we can in our own scope and plan. Of course, you understand we do not sell any eggs across the counter. All eggs we use are served to the customers for consumption right then and there.

The one particular job which I think that Chain Drug Stores can do for the Poultry Farmer, is to remind people to eat more eggs, to show them how many ways eggs can be eaten, and to bring home very strongly to them that eggs are not simply a breakfast food, but are highly desirable for lunch and supper or in drinks between meals. We

serve a chocolate milk shake with an egg in it. It tastes simply delicious. It is good for you. There are hundreds and hundreds of thousands of mothers who serve their kiddies a chocolate milk shake or a chocolate milk several times a day. Just think how the egg consumption would increase if these mothers, or a substantial part of them anyway, would put an egg in that chocolate milk drink that they are serving their kiddies. Just think how beneficial it would be to the kiddies, not to mention the Poultry Farmers.

It is our contention that by advertising this sort of thing at our soda fountains, by having our clerks suggest them, by advertising them in the newspapers and in windows, by having the customers try it themselves right then and there and enjoy it as they all do, that we are laying the ground work for greater home consumption of eggs.

In our little Chain, we have a traffic of 60,000 people a day, every day in the year, who pass through our stores. These do not all come to the soda fountain, but a very large proportion of them do. Just think what it means to have these people see a sign which says, for example: "For health and vitality have an egg in your drink today"; or, "Eat more eggs; they are good for you . . . Fried Egg Sandwich today 15c." Those are the sort of things that may remind the housewife that she needs eggs at home and she better stop at the grocery store and buy some. Or, it may give her a suggestion for a hot weather luncheon for herself and kiddies. Or, it may remind her that her children need the vitamins contained in eggs and that it might be a good idea for her to serve them an egg in their drinks. The thing has unlimited possibilities.

We, as Chain Drug Stores, can't do it all. We need your help and the help of every person connected with the Poultry Industry. We believe, however, that efforts along this line can materially help to stimulate increased egg consumption both in the soda fountain and in the home, and if it accomplishes that to a certain extent, we will feel that our efforts have been worthwhile.

I have here some copies of a broadside which shows pictures of some egg windows used by various chain drug stores on the last drive and some other information in detail about how the drives are handled. I will be very glad to distribute these to any persons who may want them, and if you will give me your name and address, I can arrange to have as many copies sent you as you wish.

I will be very glad to answer any questions if there are any, and if not, I like to express my sincere appreciation for the courtesy extended to me to come down here to say a few words to you. I hope I will have the pleasure of meeting you again.

PRODUCTION AND MARKETING OF QUALITY EGGS

H. L. SHRADER

In opening my discussion I would like to call your attention to two flowers, one obviously quite wilted and unsightly and the other fresh and beautiful. Or, if you are more practical minded, compare two stalks of celery, one badly wilted and undoubtedly tough, the other fresh, crisp, and tasty in appearance. Now, let us look at two eggs. In outward appearance they are quite similar, yet knowing the life history of these two eggs, I assure you that one is as wilted and unsightly as either the limp celery stalk or discarded flower.

Since eggs are approximately two-thirds water, have you ever thought that for any reason they should not wilt? The grade of eggs is determined by a process called candling which consists in placing them before the light and when this is done the size of the air space is readily determined. An enlarged air cell tells us that the contents of the egg have shrunk, it has lost moisture, it has wilted. If we break these two eggs, you will see that in one there is a well-rounded yolk surrounded by a thick firm white, and in the other the yolk appears flattened and weak, and the white thin and watery. These eggs may have been laid exactly the same time—the difference in appearance or apparent freshness can be explained by the difference in conditions under which they have been kept.

We meet a great deal of confustion on this term, "fresh." The Pennsylvania State Department of Agriculture has defined a fresh egg as one in which the air cell is not more than 2-8 of an inch in depth, localized and regular, the yolk visible but not plainly visible or mobile, the white firm and clear, and the germ spot not showing any visible development.

Poultry producers are frequently fooled by an egg shell. This is not the egg shell game of the carnival faker although possibly some of the producers have been fooled by him and tried to guess which shell covered the elusive pea. The egg shell in the eyes of nature is the container of the egg meat. It is only a container. It does not keep the egg fresh any more than a bottle keeps milk fresh. To keep milk sweet and to keep an egg fresh, you must cool both promptly.

The hen does her duty, she lays a good egg, but keeping the egg good until it leaves the farm is the responsibility of the poultry producer. To produce quality eggs every producer must follow certain definite rules of the game. The first of these is to gather the eggs frequently and to cool them promptly. The egg when laid is warmed to body temperature of the hen which runs from 107° to 108°F. As long as the hen sits on the nest, this egg cools very slowly. If it happens to be a warm summer day, even when the hen leaves the nest, very little cooling takes place. Equipment for quick cooling has been devised such as open mesh wire baskets or shallow cooling trays.

Professor E. M. Funk of the University of Missouri has made accurate temperature tests on individual eggs and found that when eggs were taken from the nest to a room at 50°F., they cooled to 70°F. almost 4

hours sooner in an open mesh wire basket than in a solid galvanized bucket. When eggs are spread out in a single layer they cool as much in one hour as they would in 7 hours in the wire basket.

The question of humidity in the cooling room has also been studied and the higher the humidity is kept in the egg-cooling room, the slower will be the rate of evaporation. There are three emphatic *dont's* that must be observed.

(1) Don't try to cool eggs by dipping them in water, as this removes the bloom from the egg shell and causes molds.

(2) Don't pack warm eggs in egg cases, because the cell-like space between the filler and the flat holds the heat like a fireless cooker.

(3) Don't produce fertile eggs after the hatching season. Any time a fertile egg is above 68° F. the germ development will take place and this causes the egg to deteriorate very rapidly.

There is another little duty in marketing quality eggs that is distinctly the producer's job, and that is to keep the eggs clean. Several farm practices have been recommended to help keep eggs clean, such as providing one nest for every 5 hens, using clean nesting material, deep litter on the floor and gravel in the yards, and wire netting between the roosts and dropping boards. The deep litter and gravel yards act somewhat as an automatic foot wiper and the wire under the roosts aids in keeping the hens' feet from the manure. The problem of cleaning eggs, once they have accidentally become dirty, has come in for a great deal of discussion. It is much better to dry-clean eggs than to attempt to wash them. Dry cleaning can be done with steel wool or a buffer made of emery cloth. The latest contribution of science to washing eggs is to use a 1 percent solution of sodium hydroxide (common lye). This apparently does less damage to the eggs than any other means of washing that has been devised.

In packing eggs into the case the small end should always be placed down. This has led to the phrase, "never stand an egg on its head," the head referring to the large or broad end of the egg.

Marketing of quality eggs calls for a discriminating dealer who purchases eggs on a quality basis. Be sure that he receives these eggs at least 2 or 3 times each week. In some of the western States where they have made a specialty of delivering high-quality eggs to distant markets, we find that they recommend gathering eggs during warm weather at least 5 or 6 times a day, cooling them in a humidified cooler, and then start them to market each day. I have seen eggs in the State of Utah that had been delivered to the packing plant by the producer, candled and graded by the packer, and loaded aboard ice-refrigerated cars and on the road to market less than 24 hours after they were laid. You Maryland poultry producers with a market practically at your back door have always considered "nearby" eggs superior in quality. However, producers in distant States have demonstrated that they can compete with you in your own "next door" markets. Such producers are not carrying out any practices that cannot be adopted by you or your neighbors.

RESULTS OF PULLORUM DISEASE CONTROL IN MARYLAND

DR. C. R. DAVIS
Maryland Livestock Sanitary Service

The credit for the discovery of the germ that causes pullorum disease belongs to Dr. L. F. Rettger of Storrs Connecticut Experiment Station. He made this great contribution to science and the poultry industry around the year 1900. The Widal or blood test as a means of determining the pullorum infection in the adult bird came into use around 1912, but was not used very extensively until about 1920.

The agglutination test applied to the blood of the breeding bird has long been recognized as the cheapest, quickest and best method known in the control of pullorum. Some of you may not understand how the blood test works. In simple language, if a bird has pullorum, the body forms substances to fight this infection. These enter the circulation and when the blood of this bird is brought in contact with a suspension of the pullorum germ, these substances cause the germs in the antigen to clump together.

The blood test is only the primary step, yet, a most important one in the control of pullorum. The blood testing of a flock is to merely find out which birds have pullorum. The further control of this disease is largely up to the flock owner and the hatcheryman. The flock owner must immediately get rid of all culls and birds that react to the blood test, and clean and disinfect the poultry houses. The premises should also be cleaned up as much as possible. Any new adult stock added to the flock should be tested. Chicks should be bought only from a source that is free or reasonably free from pullorum. All chicks that appear sick during the first ten days after hatching should be destroyed, as in many instances they have pullorum. The hatchery man also plays an important role in the control of pullorum. He should not set eggs from untested flocks or from flocks that did not dispose of their reactors. He should fumigate and clean his incubators at each hatch. He should never sell a weak chick. He should cooperate with and supervise his flock owners regarding blood testing as well as feeding, housing and control of other disease problems that may arise.

All that I have said so far is merely to acquaint you with some of the methods of controlling pullorum and to point out some of the many things the flock owner and hatcheryman can do in cooperation with State agencies in the control of pullorum, as well as many other diseases.

The control of pullorum disease in Maryland by the use of the blood test was started in the fall of 1927, when three flocks were tested. There has been an increase in the number of birds tested each year with one exception (1934-'35 season). In many instances there was an increase of 100 percent or more over the previous year. Chart No. 1 shows the amount of official testing done in Maryland each year since the work

MARYLAND STATE BOARD OF AGRICULTURE LIVE STOCK SANITARY SERVICE
COLLEGE PARK, MARYLAND, July, 1938.

Results of Pullorum Disease Control in Maryland

Year	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36	1936-37	1937-38
Number Flocks	3	16	16	38	79	369	326	209	468	655	847
Number Birds	3,725	5,805	6,032	12,433	29,432	81,275	89,991	59,833	100,996	207,991	250,767
Per Cent Positive	21.0	19.0	10.0	17.1	13.0	18.4	9.2	6.1	8.8	7.96	8.71

Number Flocks	*Method*		1932	1933	1934	1935	*Retest* 1935	1936	*1st Retest* 1936	*2nd Retest* 1936	1937	*Retest* 1937
			%	%	%	%	%	%	%	%	%	%
23	Tube	6 consecutive years	11.6	3.8	4.6	4.5	.....	3.7	.....	.....	4.8	.....
4	Tube	5 consecutive years	.....	20.3	5.5	6.8	.....	6.6	.....	.....	3.4	.....
16	Tube	4 consecutive years	.....	.....	11.7	9.4	.....	5.8	.....	.....	4.1	.....
44	Tube	3 consecutive years	.....	.....	.....	12.6	.....	7.3	.....	.....	4.8	.....
28	Tube	2 consecutive years	.....	.....	.....	.....	.....	6.5	.....	.....	4.6	.....
56	Plate	3 consecutive years	.....	.....	.....	9.9	.....	7.9	.....	.....	7.6	.....
109	Plate	2 consecutive years	.....	.....	.....	.....	.....	9.6	.....	.....	6.2	.....
12	Tube	1932-1933—1935-1936-1937	25.6	13.6	No Test	12.6	.....	3.0	.....	.....	5.3	.....
11	Tube	1932-1933—1935-Twice 1936-Twice 1937.....	23.6	7.5	No Test	5.6	.....	2.9	6 Neg. .64	.....	5 Neg. 2.54	8 Neg. .57
3	Tube	1935-Twice 1936-Twice 1937.....	.....	.....	.....	8.2	.....	3.3	1 Neg. .13	.....	2 Neg. .12	2 Neg. .06
8	Tube	1935-Three times 1936-Twice 1937	.....	.....	.....	6.5	.....	1 Neg. 2.6	4 Neg. .92	4 Neg. 1.5	3 Neg. 2.6	4 Neg. .52
6	Tube	Twice 1935-Three times 1936-Twice 1937	.....	.....	.....	13.4	5.5	8.3	1 Neg. 1.2	1 Neg. 2.7	3 Neg. 3.0	3 Neg. .79
7	Tube	Twice 1936-Twice 1937	.....	.....	.....	.....	.....	1 Neg. 6.8	2 Neg. .88	.....	5 Neg. 1.74	4 Neg. .65

was started in 1927. This chart shows the number of birds and number of flocks tested as well as the percent of reaction for all birds tested. This percent of reaction, while in most instances showing a decrease over the previous season, cannot be taken as a criterion for the efficiency of the test due to the fact that so many new flocks come under our supervision each year.

Some of you may be interested in the percent of reaction we find in turkeys. In 1932, we tested 307 turkeys—found no reactors. In 1933, 1,183 tested with 9.9 percent reaction. This year we found 103 reactors in a flock of 830, while only 14 reactors were found in the remaining 353. In 1934, 2,254 were tested with 1.1 percent reaction. In 1936, 1,120 tested with .08 percent reaction. In 1937, 3,300 tested with 4.3 percent reaction.

Most of you, I am sure, are interested in what results to expect by continuous testing. Chart No. 2 gives the percentage of reaction of flocks that have tested for various numbers of years, some testing two and three times, some using tube method, some plate.

You can readily see from this chart that to get the percent of infection down to a minimum or to get negative flocks, the flocks must be tested several times a year. I feel that is what we must do in order to successfully compete with chicks from the New Enlgand States where, it is reported, many of them now have most of their flocks clean of pullorum. This is the goal we should try to reach, not only for competitive purposes but for the economical safety to our own hatcheries, flock owners and chick buyers.

Most of the chicks imported into Maryland come from the New England States where, it is reported, their total percentage of reaction is less than three percent and in many instances below one percent. How did they do this? Simply by testing each flock several times a year until the percent of reaction was very low or the flock was negative. Now, most of the flocks have to be tested only once a year. In those flocks whose reaction goes up too much over the previous test, they are retested at short intervals until the percent is again low. This same thing can be done here in Maryland. We have one hatchery in Maryland that has around 35 flocks that have tested two and three times a year for the past three years. The total percent of reaction for all these 35 flocks is less than 1 percent now, with over half having no reactors. This is what I would like to see all the Maryland hatcheries do, and we must do it to compete with chicks coming from other States where they have very little pullorum in their breeding flocks.

POULTRY BREED IMPROVEMENT SCHOOLS THIS SUMMER FOR MARYLAND BREEDERS AND HATCHERYMEN

W. H. Rice
Extension Poultry Husbandman

Census and Crop Estimates data indicate that the average Maryland hen lays approximately 79 eggs per year, while in Massachusetts the average egg production per hen is approximately 107 and for the U. S. approximately 71 eggs.

A survey of 99 commercial poultry farms by the Department of Agricultural Economics of the University of Maryland covering the years 1931, 1932 and 1933 showed an average egg production per hen per year of only 127 eggs.

Since the income from approximately 100 eggs per hen is necessary to cover the cost of keeping hens under fairly good conditions, it is evident that many Maryland flocks, both farm and commercial, are actually kept at a loss due to low average egg production per bird.

The Poultry Department of the University has estimated that the losses in hatching eggs due to low hatchability totals at least $125,000 annually in the state. These estimates and State Grow Healthy Chicks Records indicate approximately 20% mortality in young and growing chicks which represents a loss of at least $214,000 annually to Maryland poultrymen. The same estimates and Maryland Farm Egg Record Project data also indicate a loss of over $700,000 annually to our industry due to pullet and hen mortality.

These economic losses, applying only to chicken hatching eggs and mortality, and totaling nearly one and a quarter million dollars annually for our state, are in a large measure due to the use of breeding stocks of inferior qualities and poor management practices. These losses can and must be substantially reduced if our industry is to be placed upon a more efficient basis.

To outline a systematic method of reducing these losses and aid Maryland poultrymen in effectively employing these methods is the paramount objective of the State and National Poultry Improvement Plans.

This improvement work, supervised in the State by the Maryland Poultry Improvement Board, is proving both popular and effective with hatcherymen and breeders in this work. This Board is composed of 5 producers representing each branch of the industry and 4 state officials.

Last fall, more than 1,000 breeders and hatcherymen attended poultry improvement meetings held in each county in the State and the two Poultry Improvement Schools, held at College Park and Chestertown.

Interest in these schools and the demand for others this year are

being met by similar schools being scheduled in various parts of the State by the Poultry Department in August. The schedule of these schools is as follows:

Monday night and Tuesday, August 1 and 2
Salisbury—For Southern Eastern Shore

Wednesday night and Thursday, August 3 and 4
Easton—For Central Eastern Shore

Thursday night and Friday, August 4 and 5
Chestertown—For Northern Eastern Shore

Monday night and Tuesday, August 8 and 9
Bel Air—For Northeastern Maryland

Wednesday night and Thursday, August 10 and 11
Smithsburg—For Western Maryland

Monday night and Tuesday, August 15 and 16
Westminster—For North Central Maryland

Wednesday night and Thursday, August 17 and 18
College Park—For Central and Southern Maryland

The objective of these schools is to provide an opportunity for greater participation in official breed improvement and pullorum disease control through the qualification of hatcherymen and breeders as Flock-Selecting Agents under Supervision of the Maryland Poultry Improvement Board.

Members of the Poultry Department Staff will conduct the schools. The evening sessions will be devoted partly to the County World's Poultry Congress organization work, followed by discussions of various breeding and pullorum control stages of the Maryland Poultry Improvement Plan. Special emphasis will be given to systematic breeding work to increase egg production per hen and to reduce mortality. Poultry and egg marketing problems will also be considered.

On the following day, demonstrations in culling and selection of popular breeds of chickens will be given, followed by selection work by those attending in order to qualify as Flock-Selecting Agents.

Every hatcheryman, hatchery flock owner and breeder should endeavor to attend the school nearest him in order to become better qualified to select his breeding stock.

By applying the principles set forth at these schools a poultryman should be able to make definite progress in increasing the average egg production per hen in his flock as well as reduce losses in both young and adult birds.

Attendance at and participation in one or more of these schools should prove of lasting value to every poultry producer who can possibly attend.

VARIETY OF POULTRY INSTRUCTION OFFERED BY UNIVERSITY OF MARYLAND POULTRY DEPARTMENT

PROFESSOR GEORGE D. QUIGLEY

A complete, modern course, emphasizing industrial leadership based upon thorough training in poultry science and the fundamentals of production and marketing of poultry products, is now being offered the people of Maryland by the Department of Poultry Husbandry. At the present time, the University is equipped in personnel to give training of such type and scope as to satisfy practically every normal need of the people of the state for any type of poultry training. Projected improvements in equipment and stock should further strengthen instruction and service.

At present the department offers four types of instruction:

1. A regular four-year course, specializing in poultry husbandry, leading to the Bachelor of Science degree. This type of training is pursued by those desiring to train for positions in commercial poultry and egg production; in the egg and poultry processing and marketing industries, and the poultry feed manufacturing and distributing industry. The courses are also designed to give basic training for prospective poultry specialists, high school teachers and county agents.

Students pursuing this course are given an opportunity to obtain training in Poultry Production, Poultry Management, Poultry Biology including culling for egg production, Poultry Genetics, Poultry Nutrition, Disease Prevention, Marketing of Poultry Products, Poultry Physiology, and Industrial and Economic Problems as related to Poultry. In addition to formal work in the field of Poultry Husbandry, students are required to pursue supplementary courses in Chemistry, Botany, Zoology, Economics, Public Speaking, English and Mathematics to build a broad intellectual foundation for service to the industry.

2. *Poultry Short Courses:*

Various types of popular poultry short courses have in the past been offered by the department and will be continued as a policy in the future. Recent examples of this type of service are the Poultry Breeding and Culling School held at College Park and at various strategic places in the state and attended by at least 300 poultrymen, and the Poultry Marketing School attended by 105 persons from Maryland and nearby states. An intensive one-week short course, featuring both production and marketing problems as feeding, culling, incubation, brooding, broiler raising, is projected for the near future. These courses usually attract persons already in the poultry business, or those who contemplate practical poultry work and who desire the latest information in a short period of time. Persons completing these courses are given certificates and qualify as Hatchery Flock Selection Agents, Egg and Poultry Inspectors, Farm Managers, and in similar fields.

3. Graduate Courses leading to advanced degrees are being offered in the fields of Poultry Genetics, Poultry Nutrition, Poultry Physiology and Poultry Marketing. Graduates from the University of Maryland and other schools are at present pursuing these courses, and are, in addition, conducting research projects which will be of value to the poultry industry of the state.

4. The Department of Poultry Husbandry is now giving special instruction in Poultry Husbandry to mature students who desire a semester or more of poultry instruction in the regular undergraduate courses, but who for various reasons do not wish to become candidates for a degree. Special rates and special arrangements are available for persons desiring collegiate poultry instruction upon this basis.

EIGHT SOUND PRACTICES FOR GREATER PROFITS

By MORLEY A. JULL, Head of Poultry Department
University of Maryland

The possibility of increasing profits from the flock has been summarized very effectively in a comprehensive statement resulting from a survey of the poultry industry of Wales. After analyzing all of the factors involved, it was concluded that "The most important factors which affect the profitableness of the poultry industry are the quality of the livestock and their management. All the major difficulties can be finally associated with inefficient stock or mismanagement."

There are at least eight sound poultry practices that if carried out religiously on the farm and commercial poultry plant will increase the profits from the flock. Six of these practices have to do with the kind of stock kept and with management problems and the other two with problems of marketing. Moreover, success with respect to the last two practices is dependent largely upon the kind of stock kept.

1. *More Rigid Selection of Breeding Stock.*

In practically all parts of the United States more than one-half of the total poultry income is obtained from market eggs. In California, it amounts to as much as 90 percent in many cases; in the Middle West, about 65 percent on the average. It follows, therefore, that the key to profitableness depends upon the breeding quality of the laying stock. Farmers and commercial poultrymen should select their breeding stock much more carefully from year to year with a view toward developing the egg-laying potentialities of the pullets raised each year.

The importance of well-bred laying stock is well illustrated in the records obtained from 49 Connecticut poultry farms for the poultry year ending in the fall of 1935. It was found that good egg production was essential in securing a good labor income, although there were some flocks that laid well but gave a low labor income because of excessive labor costs, inefficiency in management, small size business or for other

reasons. All flocks that laid less than 150 eggs per bird provided a relatively low labor income unless the operators had a special market. On a hen-day basis, the average egg production per bird among all flocks surveyed was 164 eggs, the highest being 190 and the lowest 118.

LABOR INCOME IN RELATION TO ANNUAL EGG PRODUCTION

Average egg production per bird	*Number of flocks*	*Labor income per flock*
Under 150	10	$ 61
150 - 159.9	7	1,203
160 - 169.9	11	2,191
170 - 179.9	9	1,988
180 - and over	12	2,656

The average number of eggs laid by a flock is determined by the breeding quality of the flock, relative freedom from disease, and by the feeding of well-balanced diets and other methods of management. It may also be pointed out that the better the bred-to-lay quality of the flock the less the amount of culling necessary in order to maintain the flock on an efficient basis of egg production. In order to build up the laying qualities of the flock there should be much more rigid selection of the breeding stock.

2. *Controlling Pullorum Disease.*

The testing of all breeding stock for pullorum disease should be an established practice on all poultry plants. Under existing conditions this disease costs the industry many thousands of dollars through the mortality that occurs among infected chicks produced by infected breeding stock. Since the disease is readily transmitted from infected to healthy chicks, the losses sometimes amount to as much as 50 percent of the chicks started under the brooders.

The tube agglutination test and the rapid, whole-blood, stained antigen test are employed for the purpose of detecting reactors among the breeding stock. In the hands of properly qualified parties both tests are reliable but since the reactors can be removed from the flock at the time of test when the rapid, whole-blood, stained antigen test is employed, it is recommended as being the more practical test. All testing work should be under the supervision of the State Livestock Sanitary authorities or other similarly qualified public officials.

3. *Reducing Laying Flock Mortality.*

The management of the flock with a view toward reducing laying flock mortality is of paramount importance to every flock owner and to the entire poultry industry. It is of little avail to secure high egg production if one-third or one-half of the laying pullets die early in their first laying year. The number of laying flocks that are practically wiped

out because of disease, increase each year. To the individual flock owner the loss of his flock is a tragedy but what makes the disease still more serious is the fact that mortality occurring annually among all flocks has shown an upward trend during the past few years. Not only is the economic loss from dead hens very great but, in addition, there should also be counted the loss resulting from retarded laying, poorly finished market birds and lowered egg production among the survivors.

With the ever-increasing spread of disease, the soil, the water, and even the air become more thoroughly contaminated, so that more birds become infested with parasites and infected with disease organisms to give rise to still more widespread dissemination of internal parasites and diseases of various kinds.

Many poultrymen make a practice of drugging their chickens and providing them with antiseptics in the drinking water and condiments in the feed. To administer drugs is rarely justified. Many tonics and conditioners on the market are quite worthless. Furthermore, there is still too much misbranding of poultry remedies.

Since parasite eggs and disease organisms are lurking everywhere, in the soil, in puddles of water, in cracks and crevices, and on utensils and equipment, it is obvious that chickens must be hardy and possess strong constitutions to withstand the constant attack of the enemy.

Farmers and commercial poultrymen should put into practice a much more rigid sanitation program than ever dreamed of by most of them. Even then, there will be plenty of mortality due to internal parasites and disease organisms. Thoroughly clean houses properly disinfected, clean soil and a good grass range with access to sunlight are pre-requisites for reducing laying flock mortality to the minimum.

The selection of breeding stock on the basis of vigor and livability is also necessary if laying stock mortality is to be reduced materially. Strains of breeding stock that are resistant to disease must be developed by selecting as breeders those birds belonging to families having low pullet mortality as compared with other families. Such a practice would seem to be the most logical one to follow if the greatest progress is to be made in reducing laying flock mortality.

4. *Insulate Laying Houses.*

The proper insulation of the walls and roofs of poultry houses is extremely important from several standpoints. First, in cold weather heat is conserved so that the birds require less feed and are kept more comfortable. Second, in hot weather the inside temperature is considerably cooler, thus keeping the birds in greater comfort. Third, the house temperature varies less from day to day than in an uninsulated house, thus promoting better growth in chickens and egg production in hens. Fourth, insulation establishes a greater difference in temperature between the inside and outside of the house, thus promoting better circulation of inside air and better ventilation and a drier house than when there is no insulation.

A very satisfactory method of insulating the walls of the house is to use ordinary sheathing on the inside, with building paper next to the studs is best. Still more effective insulation is secured if the space between the outside wall and the sheathing is tightly packed with shavings. Most of the composition insulating materials on the market are not satisfactory for insulating walls because chickens tend to pick holes in them.

For roof or ceiling insulation, composition boards are very satisfactory. For buildings with high roofs, the ceiling should be placed as low as possible to allow the attendant to work comfortably in the house. The so-called straw-loft is another method of insulating the roof. The straw is supported by wire netting and should be from 12 to 18 in. deep and at the ends of the house above the straw there should be ventilators to allow air to pass out from the level of the straw.

5. *Practice Efficient Feeding.*

Since the feed costs amount to approximately 60 percent of the total cost of producing eggs, it is obvious that if the greatest possible returns are to be secured from egg production the laying flock must be fed a well balanced diet. The laying diet should contain about 15 to 18 percent of protein of good quality as well as a proper balance of minerals and vitamins.

Based on the results secured at some of the state experiment stations, it would appear advisable to supplement the laying mash with animal protein from three different sources: meat scraps of good quality, vacuum dried white fish meal and milk in some form. Equal parts of each of these three animal protein supplements are recommended.

The calcium-phosphorus ratio must be properly balanced, especially with birds in confinement, if most satisfactory results are to be secured. There should be approximately 2 parts of calcium to one part of phosphorus in the laying diet.

Laying hens require approximately 700 International units of vitamin A, about 40 International units of vitamin B, about 80 A.O.A.C. units of vitamin D and about 145 units of the riboflavin vitamin per 100 grams of feed. From a practical standpoint there is little need for the average poultryman to worry about the necessary supply of vitamins A, B, and G in the ordinary laying mash diet, especially if yellow corn, green grass and milk are used. In order to supply the requirements of vitamin D for laying pullets which are fed equal amounts of mash and scratch grain, it is necessary to add to the laying mash mixture 40 pounds of cod liver oil per ton of mash if the oil contains 85 U.S.P. units of vitamin D potency per gram. If the vitamin D potency of the cod liver oil is equivalent to 400 U.S.P. units per gram then 8 pounds of the oil should be added to each ton of mash.

The feeding of well balanced diets is quite necessary to enable the laying stock to produce eggs most efficiently.

6. *Preserving Fresh-Laid Quality in Eggs.*

Among all foods used by humans, eggs are unique because their contents are enclosed in a naturally prepared shell which serves as a protection against deterioration, but because the contents are highly perishable the shell serves to conceal from the prospective consumer the deterioration that may have taken place. The shell, therefore, is both an asset and a liability; it serves to protect the egg contents, but conceals deterioration. What every producer should realize is that deterioration progresses rapidly when eggs are subjected to improper conditions of handling and storage. Some of the most noticeable changes that take place in eggs are due to high temperatures in which they are frequently held. Water evaporates through the porous shells, the air cell enlarges, the thick white tends to break down, the thin white becomes quite watery, the vitelline membrane surrounding the yolk becomes weaker and the yolk becomes more flaccid. Such is a close picture of what takes place when eggs are kept under unfavorable conditions, particularly high temperatures. Other changes also take place, including those of odor and flavor, depending upon the environment in which eggs are kept.

Although eggs are bought and sold on their candled appearance by dealers and retailers, the housewife gets her impression of egg quality when she breaks the egg in a saucer or in the frying pan. Producers should do everything possible to prevent deterioration in quality from the time the eggs are laid. This means frequent gatherings from clean nests, and storing the high-quality, fresh-laid eggs under the best possible conditions. The temperature of the holding room should be approximately 55 degrees, and the humidity of the atmosphere of the egg holding room should be 70 per cent or higher.

7. *Marketing Better Quality Poultry.*

Concerning the manifold problems that face the poultry industry, it is probably true that in many respects there is more need for improvement in the quality of poultry meat offered to consumers, and in the methods of marketing poultry than pertains to most other problems. The palatability of poultry meat is a deciding factor in determining its demand by consumers and the price they are willing to pay. Under existing conditions entirely too much thin and scrawny poultry is sent to the packing houses or directly to market. Birds that are heavily infested with parasites and sometimes diseased birds are sold for market purposes, a practice that lowers the average price of all poultry marketed.

The quality of dressed poultry offered to consumers is determined very largely by the quality of the birds before being killed, and by the methods employed in killing, dressing, and cooling. Dressed birds of superior quality are well fleshed and have plump breasts, as well as a fine finished appearance. The keel should be perfectly straight, and in the case of roasters, the spur should be only partially developed. The carcass should be free of any blemish or defect, such as torn skins

and bruises. Since dressed poultry of superior quality can only be secured from live birds that are in the best of condition, it is imperative that producers should do everything possible in the way of feeding and management to produce market birds of the greatest value. These birds should be purchased by the packing houses or poultry dealers on a graded basis for the purpose of encouraging farmers and commercial poultrymen to give more attention to the raising of high-quality market poultry.

8. *Keeping a Poultry Flock Budget.*

It is just as important for a poultry raiser to keep a budget on his poultry flock as it is for a housewife to keep a kitchen budget if she is going to feed the family most wisely and most economically. The poultryman must keep records of feed consumption, body weight, amount of labor involved in caring for the flock, as well as other expenses, if he is going to be well-informed concerning the cost of his poultry enterprise. Furthermore, it will be impossible for him to make sure that he is securing a reasonable labor income over expenses if he does not keep a record of the prices he receives for his eggs, his various classes of poultry meat, and other salable products. A complete but simple record system is imperative if the poultry raiser is to know exactly where he stands. Without some kind of a record system, it is impossible for him to determine whether or not his poultry enterprise is a losing or a paying venture. What most poultrymen in the United States need is a good, sound course in bookkeeping to enable them to manage their flocks more intelligently.

THE PURPOSE AND FUNCTION OF THE ADVISORY COUNCILS

J. E. METZGER
Acting Director, Maryland Experiment Station

It is nearly a year since President Byrd of the State University first inaugurated the idea of advisory councils in each of the important agricultural subject matter groups. Since that time, five such groups have been organized and have held at least one meeting. Although it is still too early to appraise fully the value of these councils, sufficient progress and development have been made to demonstrate their worth to both the University staff and to the producers. It should be pointed out that in the creation of the councils there was no desire to replace any existing commodity organization. In fact, the councils should, and doubtless will, be the means of strengthening some of these organizations through closer contact and better coordination of the work of the various agencies.

In general, the purpose of these councils is to make the work of the University completely effective in the development of the respective agricultural commodity interests. We believe that this purpose will be fulfilled if, through the councils, we maintain certain relationships with

the persons who are engaged in the business. These relationships may be grouped under four heads.

1. The Council must assist in keeping the technical staff advised at all times of the problems facing the industry.

Most problems requiring the application of research procedure are as complicated as an intricate jig-saw puzzle. To solve them means the compounding of the thoughts of many minds, and measures, and the examination of many conditions. It is not probable that even the simpler problems in the field of poultry management can be solved without resorting to at least several of the fundamental sciences such as chemistry, physiology, pathology, genetics and nutrition. But to attack the more fundamental problems where new and uncharted fields must be explored, the investigator must be able to resort fully to the basic sciences and go far beyond the limits of mere experimentation. Since careful observation and survey of response to conditions forms an important part of the initial steps, it is here that council members can be of infinite help and assistance to the research worker. Full and complete description of conditions causing problems or difficulties will greatly assist the research and extension worker in meeting the demands upon him for help. It helps the research worker to determine if further study is necessary and the extension worker in coming to a decision if the necessary information is available. In short, you, as a producer, encounter the problems, but you may have neither the time nor the finances to solve your own problem. Thus, an important function of the council is that of serving as a coordinating agency between the producer and your State University.

2. The research and teaching groups should recognize the Council as an initiative agency, but also as an agency that can assist in the analysis of results in terms of practice.

Analysis of research data is the most difficult phase of the three-fold process (recognition of the problems, data assembly, and analysis of data) in the scientific approach to problem solution. It is at this point where the research worker's maturity, long experience, extensive professional training, and good level-headed judgment come to fruition. No good research worker ever hesitates or fails to invite the appraisal of his interpretation of the results obtained. Where these results are to have value through use by the producers, as is the case in all agricultural research, it is especially fitting that representatives of the industry should be called into the council chambers before related educational work is undertaken. We consider the study of the results and their interpretation so important that I feel constrained to urge upon you the policy of using special committees selected from both the council membership and from without to sit in conference with our research staff for a full discussion of the interpretation and application of their findings before they are given to the public. Furthermore, here is where you

can make sure that the research man has carried his studies to the point where they are of use to the people for whom they are intended.

3. The Council should aid in determining the responsiveness of research and educational workers to the needs of the producers, and should assume a large share in securing the adoption of worthy practices.

Both you as producers of poultry, and we as administrative officers, are interested in the response of our research staff and teachers to the needs of the industry. On the other hand, these workers are interested in the extent to which the results of their work are put into effect and actually used by the producers. You can, and should follow closely the progress made in the research which you may have helped initiate. In addition, you, as council members, doubtless will find it necessary to assume leadership in the use of new strains of poultry, of new management methods and of new and better marketing practices. In the ultimate analysis the utility of the results, and the extent to which they are used will be the measure of the success in the large, coordinated program to which all of us are committed.

4. Both groups should recognize their particular functional limitations and make a conscious effort to confine their activities to their respective fields.

It should be kept in mind constantly, that the primary purpose of the advisory councils is the development of the best possible relationship between the several agricultural industries and the corresponding subject matter groups engaged in research and educational work at the University, and that their function is the solution of problems through mutual exchange of ideas and coordinated activities. Good relationships are always desirable, but what is wanted in the councils is professional amity rather than mere personal friendship. Hence, there should be evidence at all times that the relations are justified and that they stand upon the solid foundation of positive knowledge and adequate appreciation of the motives and ideals of the individuals. We can assure you that the University Experiment Station management will guard and promote the professional career of the research workers to the fullest extent. On the other hand, it will be a worthy function of the council to protect the whole industry by carefully weighing the merits of proposals and demands made upon the time of the research staff.

We have in Maryland a corps of research workers in poultry, the equal of any to be found in any institution. They are capable of doing the necessary fundamental investigations required for placing poultry practice more fully upon a scientific basis. We solicit your full cooperation and continued confidence.

CONTROLLING COCCIDIOSIS AND OTHER INTESTINAL PARASITISMS OF POULTRY

PAUL D. HARWOOD
Bureau of Animal Industry, U. S. Department of Agriculture

The poultryman is constantly threatened with extensive losses from parasitic diseases unless he confines his chicks throughout their lives to wire-floored cages. There are over 50 different kinds of parasites attacking chickens and turkeys in this country. The most destructive parasitic disease affecting chickens is coccidiosis, while tapeworm infestation may be next in importance so far as losses are concerned. Both conditions are due to groups of organisms, each containing 6 or 8 different species.

Acute coccidiosis of the bloody type, which is the variety most familiar to the poultryman, attacks chicks most frequently in the first two or three months of life, although attacks do occur in birds that have reached a more advanced age. Besides the bloody diarrhoea, other familiar symptoms include pallor, rapid loss of weight, and ruffled feathers. In this type of the disease the injury is located in the ceca or blind gut.

The so-called "milk flush" treatment for coccidiosis is recommended by some investigators for the control of bloody diarrhoea, but other investigators believe that it is of doubtful value, possibly injurious. At present, we must reserve judgment on the value of feeding 40 percent dried milk as a treatment for coccidiosis. Possibly when more information is available the "milk-flush" will be found to have merit when used under certain conditions but not in others.

As coccidiosis is a disease which runs a limited course if reinfestation is prevented, the adoption of strict sanitary measurers is almost universally recommended for the control of the disease when it occurs in epizootic form. These measures include daily removal of the litter, spraying with hot solutions of from 2 to 4 per cent coal tar creosote, daily cleaning of the feed hoppers, and of the water dishes; the latter should be immersed in boiling water to destroy all infectious material with which they have become contaminated. However, the most profitable measures which can be taken against coccidiosis are prophylactic or precautionary measures. The organism causing coccidiosis thrives in dirty, over-crowded brooders, especially if they become damp. The brooder should be cleaned thoroughly before the chicks are placed in it, the best cleansing agent being hot water. The food trays and water dishes should be placed on platforms made of hardware cloth having ½ to ¾ inch mesh and supported so that the droppings fall through the meshes and are out of reach. The food trays and water dishes should have wire guards, or other means of protection from fecal contamination. If a deep litter is used, it should be stirred daily; if a shallow litter is used, it should be changed frequently. To complete successfully that part of the life cycle which takes place outside the body of the host,

the causative organism of coccidiosis must have moisture; a warm environment is also favorable. In view of these facts the poultryman should be especially careful in his observance of sanitary measures during warm, wet weather.

Coccidiosis occurs on the range, as well as in the brooder house, and in principle the control of the disease is the same in both environments; that is, the birds should be removed from the source of infection. The food hoppers and watering equipment should be placed on wire platforms, and the roosting places so arranged that the chickens do not have access to the droppings which collect at that site. If possible, the young birds should be placed on clean ground.

So far, there is no satisfactory medicinal treatment or preventive for coccidiosis. Recently the feeding of elemental sulphur as a means of preventing this disease has received much comment. The quantities of sulphur which must be used as a preventive may be injurious to the birds, and according to some investigators, sulphur is valueless against some species of coccidia. Therefore, the use of sulphur for coccidiosis is regarded as an interesting experimental development, the practical value of which remains to be determined.

Tapeworm infestation is of no importance under brooder house conditions, because tapeworms must undergo a certain stage of development in some intermediate host, usually a snail, earthworm, or insect, before they become infective for chickens. However, where chicks are raised by the brooding hen under ordinary conditions, tapeworm infestation may occur at any age. Tapeworms rarely cause epizootics of acute disease, and for that reason some workers have doubted the importance of these parasites; however, experiments conducted at the National Agricultural Research Center have shown that moderate infestations with *Raillietina cesticillus*, one of the common species of poultry tapeworms, will retard the growth of chicks. In these experiments the chicks never recovered from the loss sustained, apparently because tapeworm infestations are of long duration. The chicks used in these experiments were kept under the best conditions which modern science could provide. It seems possible that under conditions which obtain on the average commercial poultry farm tapeworms will prove to be even more injurious than was demonstrated in our experiment.

There is no medicament known at present that is effective for the removal of all species of tapeworms from poultry. There are several substances which are effective for the removal of one species of tapeworm, but there are at least eight different species of tapeworms which occur commonly in chickens in this country. The one species which can be removed by medicaments probably is neither the most common of poultry tapeworms, nor the most injurious.

At the present time prevention is the most important avenue of attack against tapeworm infestation. The measures which have been recommended for the prevention of coccidiosis in poultry kept under range conditions are of value in the prevention of tapeworm infestation. In

addition, the poultry yard should be kept free from sticks, old boards, and other objects which, by providing shelter, will tend to attract or increase the number of beetles or other types of intermediate hosts.

The principles of sanitation which have proved valuable for the prevention of diseases of man and his domestic animals are also of importance in the control of parasites affecting poultry. However, these principles must be adapted to the habits of the fowl, to its body structure, and to the types of disease which must be controlled. Economic factors also must be considered; it is quite possible to obtain almost perfect control of parasitic diseases by raising poultry in cages with wire floors, but the capital investment to provide this type of establishment is so great that the method is not applicable to all situations. On the other hand, the modern tendency to raise poultry in large flocks has greatly increased the danger of serious losses due to extensive parasitism. Therefore, the strict application of sanitary measures is becoming more important.

There are only two species of intestinal poultry parasites for which effective remedies are known at the present time, namely, the large roundworm and the cecal worm. Research along these lines is being actively prosecuted at the National Agricultural Research Center, and it is hoped that the situation in this respect will improve in the near future. However, even if medicaments effective against all poultry parasites are discovered, it would be unwise to neglect sanitation. The sanitary barriers should always be considered the first line of defense against the parasitic enemies of the poultry flock. Medicaments should be regarded as a valuable reserve weapon to be used when the foe has successfully passed the first line of defense.

NATIONAL ASPECTS OF THE POULTRY INDUSTRY

BERLEY WINTON

Bureau of Animal Industry, U. S. Dept. of Agriculture

Poultry producers throughout the United States are confronted with numerous problems. It is my purpose this afternoon to discuss with you some of these basic problems and possibly offer for your consideration suggestions that may alleviate some of the existing conditions. These problems have to do mainly with production and the assembling and distribution of poultry and poultry products. My remarks will apply specifically to chickens but may apply almost equally to turkey problems.

Chickens of good breeding which are kept under suitable environmental conditions are rated among the most economical producers of animal food products that are both palatable and nutritious. But the handicap of poor breeding and an unsatisfactory environment are admittedly responsible for many flocks not being economical producers of food products.

There are a number of limiting factors to economical production. Some of them can be corrected quite readily by producers. Whereas there are others for which it is more difficult to find a solution.

Low egg production is a universal handicap to economical production. The average annual production per hen in 1935 amounted to only 82 eggs. But we know there are a large number of flocks whose average production is in excess of 200 eggs.

During the past few years much has been done to increase the hatchability of eggs or to decrease embryonic mortality. The perfection of incubation equipment and the adoption of improved methods of feeding and care of flocks have played important roles in increasing hatchability. But even with this marked improvement it is estimated there are at least 15 fertile eggs out of each 100 set that fail to hatch. This represents in the aggregate a tremendous loss for producers and a higher cost to consumers.

During the past two decades a marked gain has taken place in the ability to raise chicks and in the ability of chicks to live. In fact, the improvement has been so phenomenal that some people question whether or not real progress has been made in this respect in view of the heavy adult mortality which has later been sustained. However, we are not aware of experiments which indicate there is any relationship between chick and adult mortality. Nevertheless, there is still opportunity for many producers to reduce further their chick losses. In the economic survey conducted by the AAA in 1935 in the Delaware-Maryland-Virginia area, an average loss of 15.1 percent of broiler chicks was sustained—increasing considerably the cost of production.

Adult Mortality

The most disastrous problem with which poultry raisers are faced is the ever-increasing rate of mortality among adult stock. In 1936 Ferguson of Ohio made a survey in 10 States with 51 percent of the hen population which indicated that the average adult mortality of chickens in these States has increased from about 11 percent in 1925 to 18.8 percent in 1936. In Ohio there was an average loss of 24.3 percent. Mitchell of Georgia reported in 1936 that there was a mortality of 25.1 percent of all pullets entered in egg laying contests during the year 1935-1936. At egg laying contests for the year 1936-37 Mitchell reports a total loss of 24 percent. In other words 3,223 pullets out of a total of 13,429 died during the year. It is quite obvious that a death loss of 20 percent or more is not conducive to economical production.

It is my understanding that producers in this area are already familiar with the adult mortality problem. It is reported that the development of this district as a broiler area was due to a considerable extent to the increase of fowl paralysis on farms. This disease is prevalent on both commercial poultry farms and diversified farms throughout the United States. It has been estimated that a loss of nearly one hundred million dollars occurs annually in the Northeastern and North Central States, approximately one-half of which is due to this disease. Since fowl paralysis usually affects chickens after the expense of rearing them has been incurred, the economic loss from this disease is probably greater than

from any other specific poultry disease. On farms where this disease is prevalent heavy financial losses are incurred not only from deaths but also through a reduction in the number of eggs produced.

The need for a solution to this trying problem stimulated concerted action on the part of poultry interests during the past year and resulted in the establishment by the Secretary of Agriculture of a Poultry Regional Research Laboratory at East Lansing, Michigan, the function of which is to bring about an improvement in the viability of poultry. The first research project that will be undertaken at this laboratory will be a study of and development of control measures for fowl paralysis. In the past research in this field has been limited by the lack of personal facilities and funds. It is anticipated that the new laboratory will be adequately equipped and a group of scientists will be employed for work at this laboratory by January 1, 1939. The research work at this laboratory will be coordinated closely with that being done by the cooperating States. The immediate research program will be sufficiently broad in scope to permit the investigation of all phases of the fowl paralysis problem. The program will include studies of the pathologic and genetic aspects of fowl paralysis and of the effects of different management practices, nutrition and parasitism on the incidence of this disease. The annual budget allocated for this work will be sufficient to make the investigations productive of results.

Now this question arises. Can the handicaps to a more economical production be overcome, at least in part? The answer is, yes. How it may be done follows in a brief form. The adoption of the best known husbandry practices in breeding, feeding, housing, management, and sanitation will enable practically every producer to eliminate losses and reduce costs. Just what these practices are can be obtained from your own college of agriculture. However, I would like to discuss briefly with you one phase of this nation-wide problem, namely, the National Poultry Improvement Plan.

At the present time we have in operation in 42 States the National Poultry Improvement Plan the objectives of which are (1) to improve the production and breeding qualities of poultry, (2) to reduce the mortality of chicks from pullorum disease, and (3) to identify authoritatively breeding stock, hatching eggs and chicks, with respect to quality, by describing them in terms uniformally accepted in all parts of the United States. This plan is working so effectively that it is no longer necessary for you or others to buy breeding stock, chicks or hatching eggs from an unknown source. Even though the plan has been in operation for only 3 years and is voluntary, more than one-fourth of the total incubation in these States is enrolled in the program. In other words, the buyers of breeding stock and chicks believe in patronizing those breeders and hatcherymen who have underway a systematic breeding and pullorum disease control program. The success of this systematic program is of vital interest to those of you who produce broilers as it has to do with the breeding and vitality of chicks.

Individual producers, will as a rule, be more successful in their efforts to reduce costs through the adoption of improved husbandry practices than in an attempt to bring about an improvement in the quality of their products or bring about a more economical assembling or distribution of their products. However, the benefits to be derived from the latter conditions may be equally as far reaching and should be attacked by the industry.

At the present time there are literally hundreds of food products that compete for a place on the consumer's table. The degree of success attained by those promoting each product is determined largely by the wholesomeness of the product offered for sale, the purchasing power of consumers, by the amount of advertising used, the manner in which the products are packaged, the food value of the product, and the price or cost of same. It is interesting to note that all of these products are produced directly by farmers or from products which they, the farmers, produce.

It is estimated that the per capita consumption of eggs in the United States is approximately 22 dozen. In Canada the consumption is nearly 31 dozen or slightly more than an egg a day per person. The per capita consumption of poultry meat in the United States is about 20 pounds (live weight). It is questionable whether or not the consumption of eggs and poultry meat can be increased and maintained permanently unless there is an improvement in the quality of these products. Even then, it must be recognized that there is an upper limit in the amount of poultry meat and eggs which consumers will use.

It can be said without fear of contradiction that poultry producers have given relatively little attention to problems affecting quality, a greater consumption, and a more economical assembling and distribution of these products. In the past the industry has centered its attention upon the process of expansion so that we now have 85 percent of the farms in this country producing poultry and eggs. In fact, the nature of the industry is such that it does not respond readily to the suggestion that the quality of poultry meat and eggs be improved and that economical distribution is of concern to both producers and consumers.

In this connection it is well to remind you that more than 80 percent of the total egg production of the country is produced on farms with fewer than 400 birds. This means that in the aggregate most of the poultry and eggs are produced on diversified farms—where poultry keeping is just one among many enterprises that receive attention. This condition calls for an entirely different method of attack in the solution of problems affecting quality improvement than what might otherwise be used if we were dealing exclusively with commercial producers. In fact, the solution to this complex problem is so different that no concerted effort has been made by the educational agencies and the industry to bring about the desired changes. This statement should not be interpreted to mean that no improvement has taken place in the processes of assembling and marketing both poultry and eggs. But it should be

recognized that the changes brought about during the past several years have been due largely to improved transportation and refrigeration rather than through a direct attempt on the part of diversified farmers and poultry dealers to improve their methods of handling poultry and eggs.

This important question naturally follows in connection with this discussion. What suggestions will be helpful in finding a solution to this problem?

1. Producers must be made to recognize the importance of placing higher quality products on the market. This will necessitate an extensive nation-wide educational campaign. It will involve, among other things, giving specific recommendations to producers concerning production practices, methods of care in handling and marketing both eggs and poultry. The possibilities of improving the quality of eggs by following a concerted effort on the part of all agencies concerned are shown in particular by what has been accomplished by Utah producers in cooperation with other agencies in that State.

A steady improvement in the quality of Utah eggs has taken place during the past twelve years. In 1924 only 16.7 percent of their eggs were good enough in quality to grade Extras. Whereas, in 1936, 48.4 percent of them graded Extras. This remarkable change occurred as a result of establishing strict quality standards and grades of eggs, the payment for eggs on the basis of quality and the educational work done by the Utah Poultry Producers Cooperative Association and the Utah College of Agriculture.

In this connection I think it is important to remind you that all poultry producers are not in a position to place only high quality eggs and poultry meat on the market. Neither are all consumers able to pay the price necessary to obtain only high quality products. In other words there are many producers who are not equipped and do not have the desire or the training to enable them to produce products of the highest quality and the income of many consumers is not such as to permit them to pay premium prices for the choicest products. This condition is nation-wide in scope and it is important that it be recognized as a fundamental problem. But it is vastly more important that steps be taken by the industry to reshape its marketing machinery in such fashion that the quality of all poultry products can and will be designated quite closely by recognized standard grades. It is only through this means that producers of premium products can expect to obtain equitable prices for the kind of products produced and consumers with varying degrees of buying power can be assured of the relative merit of these products.

In order to bring about the desired results in the quality of poultry products it is quite obvious that those whose business it is to handle these products must play their part effectively. They must, in the first place, be equipped to handle perishable products and, in the second place, they must be willing to pay for these products on the basis of their quality. What is the situation with respect to those who handle poul-

try products? This example will suffice to give us the picture. Iowa is our largest poultry and egg producing State. In that State it is reported there are 8,000 buyers of poultry and eggs or one buyer to every 27 farms. The great majority of these buyers do not have facilities for handling perishable products and naturally they are not in a position to retain their quality or to buy and pay for eggs and poultry on a quality basis, even though many of them claim to be buying these products on a graded basis.

This widespread condition leads me to make the assertion that simultaneously with an improvement of poultry products on the farms of this country there must be an overhauling of our marketing system before a solution to the problem is developed. I doubt if the practice of issuing a permit to buyers who are not equipped to handle perishable products is warranted. If this rigid rule of withholding permits from those not adequately equipped were placed into operation, it would probably mean a consolidation of buying stations and fewer but better trained dealers. This would make possible the second essential practice, namely, the purchase of these products on a quality basis and when this is done it would eliminate much of the unfair competition by those producers who are unable or unwilling to adopt those steps necessary in the production of higher quality products.

The second suggestion that may be helpful in solving distribution problems is the one about which we have heard a great deal during the past year, namely, that of acquainting consumers with the relative merits of the food value of poultry products. To date this has been done through the cooperation of producer organizations and distributors of food products. A most commendable job has been done by this cooperative effort to stimulate the purchase of both poultry meat and eggs, particularly during the flush production seasons. But this effort has undoubtedly been handicapped greatly by the lack of more high quality products. Nevertheless, producers should continue to support the efforts which are being made in this direction and renew their interest in supplying higher quality products.

An example of what may be done to stimulate interest in the production and consumption of higher quality eggs by intelligent cooperation between organized producers and distributors is illustrated by what has happened in the Cleveland area during the past several months. Until about one year ago eggs from another area were being sold in Ohio at a premium over top grades of locally produced eggs. Producers in the Cleveland trade territory and a local Cleveland chain of food stores cooperated to correct this situation.

"A spectacular promotion campaign back of government graded Ohio eggs doubled the sale of Grade A Extras in the stores of this chain and brought other retailers into the market for Ohio Firsts. Today, Ohio eggs outsell all others at home and are held in higher respect in big eastern markets. Ohio producers find it difficult to supply the demand for their top grades at a premium they never before could obtain."

Those of you here in Maryland and Delaware may raise the question as to how such a program as has been followed in the Cleveland area may assist you. I am confident you will agree with me that there is plenty of room for improvement in the quality of those products in your States. Furthermore, there may be ample opportunities in your States to duplicate this experience. You have the large consuming centers of Baltimore, Washington, Wilmington, and other cities. In the broiler producing area of these States you have a splendid chance to improve the economical production and distribution of poultry meat.

Before concluding my remarks permit me to make a few statements about certain practices which I believe are ill-advised from the standpoint of the entire poultry industry.

When attempts are made to bring about an improvement in the quality of eggs and poultry, the industry and the educational agencies are handicapped as I have previously stated because uniform standard grades are not in general use. This is an unfortunate situation as it leads to confusion and misunderstanding on the part of both producers and consumers. Furthermore, it gives unscrupulous dealers, processors and distributors an unfair advantage. Therefore, it appears that it would be to the advantage of the industry to adopt uniform grades that are based on standard qualities. At the present time we have in vogue certain State egg grading laws that serve as a trade barrier between and among States. Grades based upon technical matters rather than quality differences and food value are indeed questionable. If an equitable and proper poultry grading system were in use cross-bred broilers would not be quoted at from 1c to 3c a pound less, when you sell them in certain markets, than straight Rock broilers, especially when the consumers pay the same price, irrespective of whether they are cross-bred or Rock broilers.

In certain markets retail dealers influence unduly the kind of poultry and eggs which are handled. For example, certain processors have had to establish their own retail outlets for "ready-to-cook" poultry because of the prejudices of dealers. Brown or white shell eggs, lemon or golden yolk eggs are preferred by certain dealers and not always by consumers as is claimed by dealers. Preferences should be dictated by consumers and based upon food values and quality rather than be determined by the whims of dealers.

The economical marketing of both poultry and eggs should concern both producers and consumers. By combining their strength producers will be more effective in bringing about changes in the methods and practices used in the field of distribution. I anticipate that in the future our machinery will be changed gradually and well-trained men will play a more important role in this field. Their services are needed badly in assembling and marketing poultry products.

SEASONAL FACTORS AFFECTING POULTRY PRODUCTION IN MARYLAND

T. C. BYERLY
Professor of Poultry Husbandry, University of Maryland

Hens lay in the spring with a minimum of attention from the poultryman. The farm hen has green grass, abundant and increasing sunlight and cool weather during that period. Little difficulty is encountered in obtaining eggs of high hatchability from the farm hen during the spring period. Chicks hatched from spring eggs from farm flocks grow well. Spring, then, furnishes the best conditions for farm poultry of any of the seasons. During the remainder of the year, the farm flock is likely to be relatively unproductive.

The bulk of Maryland poultry is in farm flocks; the average size of flock is about 90 chickens. About 200 chickens are reared on the average Maryland farm each season. Can the Maryland farmer practically do anything to make conditions during summer, fall and winter more nearly like the ideal spring conditions for his small poultry flock? "Everybody talks about the weather but nobody does anything about it" is still pretty largely true.

Let us consider Maryland weather conditions. The *mean* temperature for the state for the past 40 years is about 54 degrees F.—ideal for chickens. The extremes, however, are 109 degrees F. and —40 degrees F. —far from perfect. There are about 18 days, on the average, each winter, when the maximum temperature does not reach the melting point of water, 32 degrees F., and about 22 days, on the average, during the summer, when the maximum temperature exceeds 90 degrees F. The extreme variations from the average occur in the two western counties of the state. Garrett has a considerably larger number of cold days than the average for the state, and eastern Allegany County has a disproportionate number of hot days. Sunshine varies in intensity and duration from season to season, of course. In addition to this variability, there are about 15 clear days per month during the months of May to October, inclusive, but only about 10 days per month during November to April, inclusive.

What can the Maryland farmer do to take advantage of favorable weather conditions to the economic advantage of his poultry operations? How can he most economically reduce the effects of unfavorable weather conditions?

First of all, experimentation at the Maryland Agricultural Experiment Station and long experience of Maryland poultrymen have led to the design of a highly economical laying house well suited to Maryland weather conditions. This house is 20 feet by 20 feet. It provides adequate space for 100 to 125 layers. The front, which is open, provides for adequate ventilation without drafts. The open front also gives free access to sunshine which is especially important in the winter when the

birds are usually confined. Plans for this house may be had by writing to the Poultry Department of the University of Maryland.

Winter sunshine is especially important for hens whose eggs are to be used for hatching. Cod liver oil is not a complete substitute for sunshine. Farmers who sell hatching eggs will find it profitable to assure their hens access to sunshine on the approximately 10 clear days Maryland enjoys even during the winter months. Eggs from hens receiving direct winter sunshine often hatch 10 to 15 per cent better than eggs from hens confined behind glass.

The open front Maryland type house is reasonably comfortable for hens on hot summer days, too. Special care to provide plenty of fresh water will help make hens comfortable on hot days.

In addition to sunshine and mild temperatures, most Maryland farmers can supply their chickens with abundant green feed during most of the year. Grass is green for eight months of the year, and winter wheat, rye or barley sowed near the poultry house will extend the period during which green feed is available.

Green feed and sunshine are natural sources for many of the vitamins essential to healthy, productive poultry. They cost the farmer little and will do much to insure profitable poultry production.

MARYLAND ON PARADE FOR NEXT SUMMER'S STATE POULTRY COUNCIL MEETING

DR. T. B. SYMONS

Acting Dean and Director of Extension, University of Maryland

The people of Maryland, and particularly the poultry interests of our State, have a special honor and with it a special responsibility in connection with the Seventh World's Poultry Congress. You have heard much and will hear much more from the chairmen of the respective committees regarding the magnitude and scope of that great event. Naturally, the people of this country are anxious that the Congress and Exposition held in the United States shall be the largest and best that has ever been held.

In addition to participation similar to that offered to all the states, it has fallen to Maryland's lot, as most of you know, to entertain the official delegates from the sixty or more countries that will be represented. That, it seems to me, offers a challenge to all of us. President Byrd has given you a broad outline of some of the things that are being considered in the way of a reception to these delegates.

My topic, "Maryland on Parade for Next Summer's State Poultry Council Meeting," carries with it, I believe, a number of additional thoughts and possibilities. It is my understanding that the meeting of your Council next year, which corresponds to the meeting we are holding here today, shall be held at the University of Maryland in College Park, and that your meeting will be at the same time as the visit of official

delegates to the World's Poultry Congress from foreign countries. That, it seems to me, is a happy arrangement and affords the State Poultry Council and the University of Maryland an opportunity for one of the greatest days in Maryland agriculture, and certainly in the history of the poultry industry of our State. It can be made a great day, not only from the standpoint of what we can show our guests from foreign lands, but from the standpoint of the people of Maryland.

It is my understanding that Maryland is the only State and the University of Maryland is the only Land Grant Institution which these foreign delegates will visit in a body and in a more or less official way. It rests with our State to give to our guests a proper conception of the services rendered by a Land-Grant Institution, the cooperation between the University and those engaged in the various phases of agriculture and industry, and what it means in the economy of the State as a whole.

Thinking more specifically of the situation as to what we may do, let us consider first the poultry industry. The picture is especially bright. The industry has a strong, active, and aggressive organization that has accomplished wonders in the few years of its existence. By arranging its meeting at that time, it is shouldering an important part of the responsibility, as I shall emphasize later. The plan for Maryland's participation in the World's Poultry Congress very properly contemplates greatly strengthening the State Poultry Council before the event next year. The organization for rallying the poultry interests is ready and it has shown its ability to carry through the projects it undertakes.

From the standpoint of the University, Maryland will have a modern and adequate poultry plant, in keeping with the importance of the industry in the State, and which all may justly be proud to exhibit to our foreign friends. When we speak of Maryland being "on parade," we mean that no effort will be spared to show our visitors the facilities of the University for carrying on its wide diversity of service in education, research, extension, and regulatory. It is my conception that each and every department of the University shall plan such exhibits and demonstrations as will best give to our visitors in a short time an impression of the kinds of work they are doing. When I say visitors, I mean the people of Maryland, as well as the people from foreign lands, for I visualize a great educational event for perhaps the largest number that has ever visited their University at one and the same time.

That brings me to a point which I believe is vital in our planning for this event. I cannot describe the types of exhibits and demonstrations that the Poultry Department, the Animal and Dairy Husbandry Department, the Crops and Soils Department, the Horticulture, the Entomology, the Pathology, the Home Economics, and the others may arrange. Each of them will require careful planning before those in charge know what is best. But I would emphasize that regardless of the excellence of the showing made by the University from the standpoint of its physical equipment, its buildings and lands, our foreign visitors will miss a vital part of the function of the University unless they see a large crowd of Maryland people at their University and participating in the event.

Some years ago, we had what was called a "Farmers' Day" at the University each year, when people came from all parts of the State in great numbers. Every effort was made to make the event of as great value educationally to those who came as was possible. There has been a sentiment, even a demand, for revival of that event. It is my conception that July 26, 1939, shall be greater than any of the "Farmers' Days" that have ever been held. To make it such, the people of Maryland must be there. Your State Poultry Council can be a most important factor in making that part of the program an outstanding success. It is an event in which each and everyone can properly feel a mutual interest and pride, for our State and University will truly be "on parade," before ourselves and before outstanding representatives of the world.

The day will be outstanding from the standpoint of its educational value and the opportunity for self-improvement. While profiting himself, each person who attends will help to give to the foreign visitors a correct impression of the place that a Land-Grant Institution occupies in a State, the service it is rendering to the people generally, and the relation of their State Educational Institution to the people.

THE IMPORTANCE OF F.F.A. POULTRY WORK IN THE FUTURE DEVELOPMENT OF MARYLAND'S POULTRY INDUSTRY

H. F. COTTERMAN

State Supervisor of Vocational Agriculture

I am very happy to have the privilege of addressing you this afternoon and telling you something of the F.F.A. program in the State in its relation to poultry development. There are vocational departments of agriculture in every County in Maryland except Cecil.

Last year we had vocational agriculture in 53 white high schools and 12 colored schools, with an enrollment of 1,942 white boys and 500 colored boys. The F.F.A. organization, which means the Future Farmers of America, is an integral part of the instruction in vocational agriculture for white boys. The organization for the colored boys is known as the N.F.A.

The Maryland program in vocational agriculture is an 8-point program with rural youth as the center. The topmost point is a life career closely supported by a diversified farming program for each pupil, upon which is based our instruction in agriculture, related science, and farm shop. Through F.F.A. organization we are in intimate contact with public affairs in agriculture as a result of our association with such organizations as the State Grange, Maryland Farm Bureau, the Maryland-Virginia Milk Producers' Association, the Inter-State Milk Producers' Cooperative, the Maryland Cooperative Milk Producers, the P.T.A., service clubs, County Fair Associations, and the Maryland Poultry Council.

Much of our poultry work makes up a part of a pupil's total farming program in agriculture. In addition to poultry, he may have corn, dairy, tobacco or other projects. One of the pupils we had picked for the

poultry boy in the NEPPCO contest, is Clark Nicholson, whose high school record is as follows:

	1st Year	*2nd Year*	*3rd Year*	*4th Year*
	80 baby chicks 1500 celery plants	50 pullets 500 baby chicks	190 pullets 1000 baby chicks ½ acre garden 48 rabbits	201 pullets 700 baby chicks ½ acre garden 67 rabbits ½ acre potatoes
Labor Income.....	$15.47	$228.69	$477.75	$383.72

The latest figures which are for the production season of 1936-37 show that we had vocational agricultural boys in poultry work as follows:

Fifty-three boys showed eggs in the Sixth Maryland Poultry Producers' Show held at the Lord Baltimore Hotel, under the auspices of the Maryland Poultry Council, at the time of the Farm Bureau meetings in January, 1938. Poolesville High School won for the third time and now keeps the cup permanently.

Thirty-eight teams, a total of 76 boys, participated in the F.F.A. Poultry Judging Contest held the last Saturday in April, 1938, at the University of Maryland.

High Teams: Poolesville High School
Oakland High School
Highland High School

High Men: Arthur Stevens—Highland High School
William Baker—Liberty High School
Harley Wildesen—Oakland High School

All our schools take poultry magazines, study poultry books and bulletins, study poultry units in class, and carry on far more activity in poultry in a thorough, systematic way than this report portrays.

The part that F.F.A. boys will play in the future poultry industry in Maryland is obvious. These high school boys of today become the land owners of tomorrow. They will be well trained in this industry and will have the vocabulary of the science of poultry production. Most of them begin their poultry projects by buying day-old chicks and brooding them in mechanical brooders. Unquestionably, many who sell day-old chicks have received orders from F.F.A. boys. High school pupils are surprisingly successful in operating their brooders. Their percentage of mortality is very low.

We are glad to have the F.F.A. boys become acquainted with the work of the Maryland Poultry Council, and are happy to know that the Council has made arrangements to provide $50 to help send a team to

the Eastern States Exposition at Springfield, Massachusetts, this September, and in the name of the 1,942 white boys in vocational agriculture, I wish to thank the Poultry Council for the gift which makes this trip to Springfield possible for the winning team.

POSSIBLE IMPROVEMENT IN 4-H BOYS' POULTRY CLUB WORK

E. G. JENKINS

State Boys' Club Agent

There are a few more than 10,000 active 4-H Club members in Maryland. About 4,600 are enrolled under county agents, and a few less, than 4,000 completed projects last year.

Club work in many states, and in some parts of this state, is promoted by local leaders. This doubtless is the greatest need in the 4-H Club field today.

Consider, if you please, what might be done in poultry club work if we had 100 poultry clubs, each led by a man who would devote the same time and directed energy to poultry club boys that scout masters devote to scouts.

Some years ago a prominent Maryland dairy breeder convinced many dairymen that the State, as he said, "needs to develop dairy men more than it needs to develop dairy animals." With this idea in mind many breeders have devoted time and interest and money in the field of dairy club work. They have helped make hundreds of our boys "dairy minded." In most of the counties we have scores of boys who know and love the "dairy game" as town boys know and love baseball. All year 'round they give untiring effort to developing their herds. They are really enthusiastic about it all. We are developing better dairymen — dairyminded farmers.

What were the means and methods used?

1. Matured, worthwhile projects.

Here and there a boy developed a sensational animal. The young man who placed first at Timonium is often offered a sensational price for his champion. Not more than two years ago it was $2,000 for a heifer. This isn't a big factor but the scores of boys who have bred and raised cattle that compete successfully with the big breeders are factors.

Last year over $125,000 worth of livestock was owned by Maryland 4-H Club boys. That is no boy-sized job. That's a man-sized job being done by boys and girls.

All livestock owned by club members was estimated at a value of about $110.00 each person.

All poultry owned by club members was valued at about $35.00 each member.

There is a much wider spread between the size of the 4-H Club dairy demonstration and the poultry demonstration.

2. Attractive awards for exhibiting.

Our dairy exhibits are well known for their quality as well as numbers shown and the influence on youth is most stimulating. Hundreds of boys are working every day in the year to improve their herds, not alone to win a prize, but to measure up to a worthwhile standard.

There has been no State poultry exhibit for 4-H Club folks since the Fifth Regiment Poultry Show years ago.

3. Wide use of cattle judging as an educational factor.

Less than 70 boys judge at Timonium but nearly ten times that number have received some degree of judging training and experience during the year.

Not many poultry club members "go out" for judging and the State judging contest has been witnessed by less than a dozen poultrymen for years.

4. Tours.

This week all the dairy club members—well, nearly 100% of them—in Montgomery County will spend a day touring 4-H dairy projects. There is a Junior Jersey Cattle Club over there which has for over a dozen years promoted and conducted this tour among its members and has included members owning other breeds. It's a stimulating, educational, and a promotional enterprise.

Actually hundreds—perhaps over the years—thousands of Maryland's farm boys have been taken to inspect the best dairy farms in Maryland, Delaware and Southern Pennsylvania.

Scores of boys have gone far afield—indeed as far as Texas on the South and Minnesota and Missouri on the West, to see good herds. Our boys have attended every National Dairy Show since 1920. They have visited the Eastern States Exposition, Trenton and other large dairy shows and scores have exhibited their stock on wide circuits. An even dozen have seen the best herds exhibited at the Royal Stock Show in England.

A few poultry club members have been to N. E. P. Co. in N. Y., judged there, but have received very little information or inspiration. Very few have visited outstanding poultry breeders.

5. Assistance and instruction from big breeders.

Constantly leading dairy cattle breeders are attending club meetings, having groups come to their farms for intensive study, helping individual boys with their problems, advising them when trouble arises. There have been a few cases where breeders in their enthusiasm have subsidized boys but this has never been a valuable factor.

A few poultrymen are giving this service to club youth.

6. Expert instruction and assistance from the University.

Four-H dairy club work has had constant assistance from specialists and instructors. At least five men have devoted some of their time each year and two have given much time to group instruction of dairy club members in every phase of the work.

Before Mr. Rice became so involved in the Poultry Council affairs he gave much very valuable help to club folk, really improving several entire communities.

It has always seemed to me that the poultry business of Maryland deserves the same strenuous efforts for its promotion that the dairy work is receiving.

I use dairy as a comparison for several reasons:

First, we have almost exactly the same number of club members in each project.

Second, it is, after all, a comparable farm and home enterprise.

Third, the same teaching methods apply to each.

Fourth, they have much the same appeal to youth.

Fifth, each is being organized and has active, efficient and high minded men and women deeply concerned in the welfare of youth as well as the welfare of the enterprise.

Sixth, from an educational and supervisional standpoint two leading enterprises, lending themselves to 4-H Club demonstration, and similar in importance, should receive like attention from every agency concerned with their development.

To repeat my suggestions for improving 4-H Club poultry work I submit these points:

1. At least 100 voluntary poultry club leaders.
2. A determination on the part of leading poultrymen to develop poultry minded youth with larger, more challenging flocks.
3. Local, county and State exhibits.
4. Judging as a universal educational factor.
5. Promotion of club tours to leading poultry farms and to outstanding exhibits.
6. Cooperation between poultrymen and active poultry clubs and interested club members.
7. Completion of program of 4-H Club activities of the poultry department in counties and in the State emphasizing activities and instruction designed to develop poultry minded men and women.

THE PART MARYLAND BREEDERS SHOULD PLAY IN THE LIVE POULTRY EXHIBIT AT THE WORLD'S POULTRY CONGRESS

ELWOOD TAYLOR

Berwyn, Md.

First, to be sure that we understand some of the plans for the Competitive Poultry Show, I will run over the most essential ones.

The exhibit will be limited to 5,000 birds of all kinds due to the size of the available floor space.

It is expected that a much larger entry will be made, so the man-

agement has ruled that if it becomes necessary to return entries that only parts of entries will be returned giving everyone making an entry the chance to show at least some birds.

Consideration will also be given, in the return of entries, to an equal representation of the different breeds, the idea being to have all breeds represented by a fair class.

The objective is to have a show of good size made up of choice specimens, every breed well represented, which will make an attractive balanced show for the public to view.

The judging will be done by a corps of the best qualified judges, all judging to be finished and the awards posted before the Congress is opened.

No cash prizes will be paid, but appropriate medals, plaques and trophies of the very highest quality will be awarded.

A Court of Honor is planned as a special display in the center of the building consisting of the champion male, champion female and champion trio, dividing the show into twelve separate classes. This will mean twenty-four individual champion birds and twelve champion trios.

The entry fees as recommended are as follows: *Singles*—Chickens, Peafowl, Turkeys, Ducks and Geese, $4.00; Bantams, Guineas and Pigeons, $2.50; *Trios*—Chickens, $8.00; Bantams, $5.00.

The part that this Committee desires the Maryland breeders to play in this exhibit is:

To make a creditable entry as Maryland breeders.

This means entries of some birds in every breed.

Birds in condition fit to show in keen competition.

In the final analysis, what is to give the greatest credit to the State is the number of ribbons that are hung on the coops of Maryland birds.

A win of any prize at this show will be a life-long pleasure and would probably increase your business considerably.

Could there be anything more pleasing to this Committee than to see numerous Maryland specimens at this great show with prize ribbons on their coops, more especially R. O. P. birds having a high egg record so that Maryland breeders could say:

"We breed them for business and beauty."

"We can do it!"

You know and I know that some of the best poultry in the country is raised in Maryland.

As Maryland poultry breeders, we have an opportunity to prove this to the poultry world.

Are we going to do it?

Or are we going to stand back and let the other fellow take all the laurels?

I say no.

I have faith in you (Maryland breeders).

This is a call to seize an opportunity that we, as breeders, will not have again.

Make up your mind right now that you will send some birds to the Congress show.

Just a word to the breeders on preparation for this exhibit.

First, start now and stop on July 29, 1939, the day after judging.

Go home and mate up at least one pen of say probably early pullets (10 females and 1 male) of the very best exhibition breeders you have.

Give them a separate house and yard as well as a lot of special attention.

Get out some chicks in October and November.

Cull these chicks closely as they develop, retain only the birds showing good show type quality and free from disqualification.

Give these birds proper quarters by themselves for the winter and as much outdoor exercise as weather conditions will permit.

Separate the males and females.

Do not use these birds for breeding.

They are your best possibilities for hens and cock birds that will be in good feather during July.

It would be practically impossible to get a selection of old birds in new feather at this season of the year.

Hatch some chicks on January 1st to be sure you will have cockerels fully developed and finished by July.

Chicks hatched in February and March should produce pullets to round into their pink by July.

This may sound like a lot of trouble, but I believe in going after the job with the proper planning and preparation and then if you fail there is always the consolation that everything was done that was possible to make the job a success.

We are not going to fail!

You must arouse your enthusiasm and your sporting blood to their boiling points and go to it; then I know Maryland colors will, as always, come through flying with some nice wins for the Maryland breeders at the World's Poultry Congress in Cleveland next July.

REPORT OF RESOLUTIONS COMMITTEE

MRS. W. W. HOPKINS, Cordova, Chairman.

Pullorum Testing

1. WHEREAS the poultry industry of Maryland suffers losses of many thousands of dollars every year from mortality in chicks because of pullorum disease, one of the most serious menaces with which the industry has to contend, and

   WHEREAS a recent survey has shown that many thousands of dollars are sent out of the state every year to purchase chicks secured from pullorum-tested flocks in other states, and

   WHEREAS it has been shown that the mortality among chicks secured from flocks that have not been tested for the pullorum

disease is considerably higher than the mortality among chicks secured from pullorum-tested flocks, and

WHEREAS there is urgent need for a well-organized, active campaign to reduce pullorum infection to the minimum among Maryland poultry breeding flocks,

THEREFORE BE IT RESOLVED, That the President of Maryland State Poultry Council on behalf of over 35,000 poultry raisers in the state be requested to appoint a committee to confer with the Governor, the members of the Legislature and the President of the University with a view toward securing the necessary assistance to cope with the distressing disease menace facing the poultry industry.

Committee:
John W. Evering—Stemmers Run—Chairman
Mrs. W. W. Hopkins—Cordova
Wilmer F. Davis—Federalsburg
Chas. F. Hines—Sykesville
W. A. Spearin—Salisbury
C. E. Street—Rocks
A. A. T. Williar—Laurel
A. Hayes—Thurmont

Baby Chick Auctions

2. WHEREAS in the past many chicks of low quality have been shipped into Maryland to be sold by auction, oftentimes at ridiculously low prices, and

WHEREAS many of these chicks suffer heavy mortality in the hands of those who purchase them, and

WHEREAS the auction method of selling these chicks at such low prices tends to demoralize the legitimate baby chick industry of Maryland hatchery operators,

THEREFORE BE IT RESOLVED, That the President of the Maryland State Poultry Council be requested to appoint a committee to prepare a draft of a bill for passage by the Maryland State Legislature governing the selling of baby chicks in Maryland by the auction method.

Committee:
Clarence Roberts — Landover — Chairman — and Pullorum Testing Committee.

Japanese Importations

3. WHEREAS it has been reported that there has recently been organized The Japan Farm Products Export Company at Nagoya, Japan, among the activities of which will be to ship to the United States 100,000 chickens per month, and

WHEREAS it is also reported that the Japan Farm Products Export Company in the near future contemplates shipping 500,000 chickens per month to the United States,

BE IT RESOLVED, That the President of the Maryland State Poultry Council be requested to appoint a committee to investigate the authenticity of the report and if ascertained to be true to request the Federal Tariff Commission to determine the cost of producing chickens in Japan and in the United States, and

FURTHER BE IT RESOLVED, That the Committee appointed by the President of the Maryland State Poultry Council request the appropriate national poultry organizations to appoint committees for the purpose of studying the possible injury to poultry producers in the United States resulting from the importation of such proposed large quantities of Japanese poultry, and

FURTHER BE IT RESOLVED, That the Committee appointed by the President of the Maryland State Poultry Council take the necessary steps to see that all pertinent data bearing on the problem are brought to the attention of and request the favorable consideration of the United States Department of Agriculture, the State Department of the United States Government, and the United States Congress to the end that the best interests of poultry producers in the United States will be preserved.

Committee:

H. H. Riech—Preston—Chairman
J. R. Eddington—Federalsburg
Norman T. Whittington—Marion

4. Demonstration Projects on the Efficiency of Poultry Production, Particularly from the Standpoint of Reducing Mortality and Conserving Soil Fertility, under Systems of Management Involving the Utilization of Grass Range.

WHEREAS, the provisions of the "Agricultural Adjustment Act of 1938" are based upon the fundamental principle of maintaining the price of corn and wheat on a parity with prices of industrial commodities in general, thus tending to increase the cost of corn and wheat to poultry producers as compared with former years, and

WHEREAS corn and wheat constitute by far the largest portion of all poultry rations, and

WHEREAS the maintenance of an "ever-normal granary" will tend to stabilize corn and wheat prices at a relatively higher level than existed prevously, and

WHEREAS corn, wheat, cotton, and tobacco producers in particular are to receive compensation on the basis of the treatment or

use of their land for soil restoration and soil conservation and on the basis of changes in the use of their land, and

WHEREAS the costs of raising chickens and turkeys and the costs of producing eggs are reduced if poultry is provided with suitable grazing ranges, and

WHEREAS such suitable grazing ranges tend to promote the objects of the soil conservation program of the United States Department of Agriculture by restoring and conserving soil fertility, and

WHEREAS the nutritive value of grass and other green crops growing on areas over which poultry are ranged is improved as a result of the relatively high fertilizing value of poultry manure, and

WHEREAS the poultry industry is a soil building industry rather than a soil depleting industry, and

WHEREAS mortality is reduced when poultry are provided with suitable grazing ranges,

THEREFORE, BE IT RESOLVED, that the Secretary of Agriculture of the U. S. Government be requested to establish demonstration projects on the utilization of grass ranges for poultry with a view toward reducing the costs of raising chickens and turkeys and of producing eggs, and with a view toward reducing the excessive mortality now prevailing on most poultry farms, the basis for conducting such demonstration projects being attached herewith, and

FURTHER BE IT RESOLVED, That this resolution be forwarded to the Secretary of Agriculture.

5. RESOLVED: That the Maryland State Poultry Council commend Dr. H. C. Byrd for establishment of the Agricultural Advisory Council and that the Council will welcome the opportunity contemplated by this body for conferences on the problems of the poultry industry.

6. RESOLVED: That the Honorable Governor Harry W. Nice be requested to provide in his biennial budget for 1939-40 $10,000 for administration of the Fresh Egg Law and $1,500 for the Inedible Egg Law.

7. WHEREAS the poultry industry of Maryland is faced with urgent economic problems and pressing needs, and
WHEREAS during the past 12 or 15 years the University poultry program has been very limited,

BE IT RESOLVED, That it is the consensus of opinion of the members of the Maryland Poultry Council and poultry producers in the state that the poultry research program of the University should receive the fullest possible consideration of the University officials, and

BE IT FURTHER RESOLVED, That the President of the Council express to the President of the University the appreciation of the Council and the Industry for making possible the development of a program that it is felt will be of great value to the industry of the state.

World's Poultry Congress

8. WHEREAS the Seventh World's Poultry Congress is to be held at Cleveland on July 28-August 7, 1939, at the official invitation of the United States Government, and

WHEREAS each of the states has been invited to present an educational exhibit portraying its poultry industry, and

WHEREAS this Congress will be attended by hundreds of thousands of people interested in poultry from all parts of this nation and from many other countries, and

WHEREAS, it is the desire of Maryland poultrymen that an exhibit worthy of the $14,000,000 industry in the State of Maryland, with its 39,000 poultry producers, be presented at the Seventh World's Poultry Congress,

BE IT RESOLVED, That the Maryland State Poultry Council, assembled at its annual summer meeting at Ocean City, Maryland, this 27th day of July, 1938, request the legislature of the State of Maryland to appropriate the sum of $4,500 to be expended by the Maryland Poultry Congress Exhibit Committee in the preparation and presentation at the Seventh World's Poultry Congress at Cleveland, Ohio, July 28-August 7, 1939, of an exhibit portraying the Poultry Industry of the State of Maryland.

9. WHEREAS, in view of the splendid contribution to our program by Mr. Homer H. Pepper, Selbyville, Del.; Mr. G. M. Burr, Tunkhannock, Pa.; Mr. H. L. Shrader, Washington, D. C.; Dr. Paul D. Harwood, U. S. Research Center, Beltsville, and Dr. H. F. Cotterman, E. G. Jenkins and Prof. J. E. Metzger, of the University of Maryland, and the valuable information contained in their presentations,
BE IT RESOLVED, That the Maryland State Poultry Council hereby expresses to Messrs. Pepper, Burr, Shrader and to Dr. Harwood, Dr. Cotterman, Mr. Jenkins and Prof. Metzger its sincere appreciation for their contributions.

10. WHEREAS, the splendid contributions and support, as well as the presence of Dr. H. C. Byrd, President of the University of Maryland, in his capacity as Toastmaster of our Banquet has added greatly to the dignity and enjoyment of the occasion.

BE IT RESOLVED, That the Maryland State Poultry Council hereby expresses to Dr. Byrd its sincere appreciation of his presence and many fine contributions to our banquet program.

11. WHEREAS, in view of the interest and support rendered the Council through their fine entertainment on our Banquet Program by Mrs. Geo. W. Vincent of Snow Hill, Mrs. Elizabeth Seidenspinner of Berwyn and Mr. Frank Govans of Washington, D. C.

BE IT RESOLVED, That the Maryland State Poultry Council hereby expresses its sincere appreciation to these friends for their splendid contributions.

12. WHEREAS, in view of the fine contributions and services rendered various phases of our Council program and entertainment by Mr. R. T. Grant, Snow Hill; Mr. John A. Tubbs, Selbyville, Del.; Mr. W. A. Spearin of Salisbury, Mr. Chas. S. Williams, College Park; Mr. J. W. Snoddy, our President; Miss Judith Ault, Miss Lucy Walter and others on the Ladies Party, Mr. Geo. Keen in arranging fishing parties, and especially to Mr. and Mrs. R. H. Bailey, proprietors of Hotel George Washington for their many courtesies and help in accommodating our Convention.

BE IT RESOLVED, That the Council hereby extends its sincere appreciation to each and all of these for their fine cooperation.

Respectfully submitted,

RESOLUTIONS COMMITTEE,

MRS. W. W. HOPKINS, Cordova,
Chairman.

Fifth Annual Winter Meeting

OF THE

Maryland State Poultry Council

Wednesday, January 11, 1939

Lord Baltimore Hotel

Baltimore, Maryland

Meeting called to order by President J. W. Snoddy, Lanham, Maryland, at 1:30 P. M.

Informal verbal reports on progress on project work were submitted by chairman of the following Standing Committees: Marketing, James M. Gwin; Economic Stabilization, Dr. S. H. DeVault; Disease Control, Dr. H. M. DeVolt; Egg Publicity, Herbert D. Copeland; Organization, Harry H. Rieck.

Report of Ivon T. Morton, Chairman of Credentials Committee, showed the following certified Delegates and Directors present and eligible to vote: Baltimore County, Mrs. A. W. Sattler; Tri-County Poultry Association, Robert C. Street, L. L. Colona and R. B. Cleland; Talbot County Poultry Association, Mrs. W. W. Hopkins, Ivon T. Morton, R. S. Brown; Prince Georges County Poultry Association, John W. Snoddy, T. R. Betts, Carl R. Nyman; Maryland Egg Producers Cooperative, Charles F. Hines, H. D. Copeland, J. Morgan Everett; Caroline County Poultry

Association, H. H. Rieck, Mildred R. Kern, George W. Clendaniel; Howard County Poultry Association, Dr. L. H. Baker, Mrs. Elwood Anderson, Wm. G. Bode; Dorchester County Poultry Association, A. R. Peterson; Queen Annes County Poultry Association, John H. Moffett, Kenneth Baker, Mark Miller.

President Snoddy and Secretary Rice gave informal reports on their activities for the past 6 months.

In the ensuing election of officers the following were elected:

President—H. H. Rieck, Preston
First Vice-President—J. W. Snoddy, Lanham
Second Vice-President—Mrs. W. W. Hopkins, Cordova
Secretary—W. H. Rice, College Park
Treasurer—John J. Cowan, Bowie
1939 Director to Maryland Farm Bureau and N.E.P.P.-C.O.—President H. H. Rieck
1939 Delegates to N. E. P. P. C. O.—Charles F. Hines, Sykesville; A. R. Peterson, Cambridge
1939 Delegates to Maryland Farm Bureau—Mrs. W. W. Hopkins, Cordova; A. R. Peterson, Cambridge; H. D. Copeland, Anacostia, D. C.

Under general and miscellaneous business Mr. Snoddy moved, Mr. Cleland seconded, that a show superintendent be selected and endowed to finance the 1940 State Poultry Products Show. Motion carried.

REPORT OF RESOLUTIONS COMMITTEE

Mrs. W. W. Hopkins, Chairman

1. Fresh Egg Law Appropriation

WHEREAS, the Maryland State Legislature at its last session caused to be enacted the Maryland Fresh Egg Law, which in turn was signed by the Governor, and

WHEREAS, no specific appropriation was made available for the administration of the law, and

WHEREAS, the proper enforcement of the law would render a distinct service to producers, dealers, and consumers, and to the poultry industry of the state,

THEREFORE, BE IT RESOLVED, That the Maryland State Poultry Council request Governor Herbert O'Conor and President H. C. Byrd to provide in their respective biennial budgets for 1939-40 an appropriation of $10,000 for the administration of the Fresh Egg Law, and

BE IT FURTHER RESOLVED, That the Maryland State Poultry Council request the Maryland State Legislature to make available the said sum of $10,000 for the administration of the Fresh Egg Law.

2. **Pullorum Testing of Breeding Flocks**

WHEREAS, pullorum disease is costing the poultry industry of Maryland the loss of many thousands of dollars annually through mortality in growing chicks, decreased egg production and lowered hatchability of eggs produced by infected breeding stock, and

WHEREAS, several hundred thousand dollars are sent outside of the state each year by broiler operators, commercial egg producers, and farmers for the purpose of securing chicks from flocks in which pullorum disease infection has been reduced to the minimum, and

WHEREAS, the proper testing of breeding flocks under official state supervision is the only practical and reliable means of reducing the ravages of the disease.

THEREFORE, BE IT RESOLVED, That the Maryland State Poultry Council appeal to the Governor of the State and the President of the University to provide in their biennial budgets a sum of $12,000 to promote the eradication of the disease, and

BE IT FURTHER RESOLVED, That the Maryland State Legislature be requested to appropriate the sum of $12,000 to promote the eradication of the disease, a portion of which sum shall be used for retesting all breeding flocks that are found to contain more than 2 percent reactors on the first test of each breeding season.

3. **World's Poultry Congress Educational Exhibit**

WHEREAS, practically all of the states in this country are preparing to stage educational exhibits, portraying the outstanding features of the poultry industry of their respective states, at the Seventh World's Poultry Congress to be held in Cleveland, July 28 to August 7, 1939, and

WHEREAS, the poultry industry of Maryland is the second most important branch of agriculture in the state,

THEREFORE, BE IT RESOLVED, That the Governor of the State and the President of the University be asked to include in their biennial budgets for 1939-40, and that the State Legislature be requested to provide the sum of $4,500 for the purpose of preparing material for said exhibit, staging and attending it at the Congress, and transporting it to and from the Congress.

4. **Thanking Maryland State Fair Board**

WHEREAS, the Maryland State Fair Board in its wisdom has provided generous prizes for the numerous classes of eggs, chicks, and breeding stock at the Seventh Poultry Products Show and for breeding stock at County Fairs, and

WHEREAS, the Maryland State Fair Board has shown a keen interest in encouraging 4-H boys and girls and F. F. A. boys to undertake the breeding of poultry on the basis of the progeny test, and

WHEREAS, the Maryland State Fair Board has made available a sum of money to enable Maryland boys and girls of outstanding merit in poultry work to participate in the Youth Program of the World's Poultry Congress,

THEREFORE, BE IT RESOLVED, That the Maryland State Poultry Council commend the Maryland State Fair Board for its liberal and forward-looking policy in the future development of the poultry industry of Maryland.

5. All-Inclusive Livestock and Farm Products Show

WHEREAS, under existing conditions there is a marked lack of coordination of effort in holding the annual shows of livestock and various classes of farm products, and

WHEREAS, an all-inclusive livestock and farm products show, including all classes of livestock and all classes of farm products held at one time and at the same place would undoubtedly be in the best interests of the future development of Maryland agriculture,

THEREFORE, BE IT RESOLVED, That the Maryland State Fair Board be requested to take the necessary steps toward the holding of an all-inclusive farm products show at one time and in the same place, and

FURTHER BE IT RESOLVED, That a copy of this resolution be forwarded to the Maryland State Fair Board, the Maryland State Farm Bureau, and to each of the organizations representing commodity branches of agriculture.

6. Thanking Dr. T. B. Symons

WHEREAS, Dr. T. B. Symons, Acting Dean of the College of Agriculture and Director of Extension, rendered very valuable assistance in securing the Fifth Regiment Armory for the Poultry Products Show,

THEREFORE, BE IT RESOLVED, That the Maryland State Poultry Council heartily expresses its thanks to Dr. Symons for his splendid cooperation.

7. Thanking Mr. T. E. Schluderberg

WHEREAS, Mr. T. E. Schluderberg has shown a keen interest in the success of the Seventh Poultry Products Show, and has generously donated his own services as well as that of his decorator and other help in staging the Show,

THEREFORE, BE IT RESOLVED, That the Maryland State Poultry Council expresses to Mr. Schluderberg its fullest appreciation for his generous assistance.

8. **Thanking Several Parties for Valuable Assistance**

WHEREAS, very valuable services have been rendered by Mr. Rob R. Slocum and Mr. H. L. Schrader of the U. S. Department of Agriculture, Mrs. Earl Howard, Mr. John Moffett, Mr. R. Kenneth Frey, Mr. Martin, Mr. Frischknecht and Mr. Paulhus in judging eggs, chicks, and poultry without charge and in various other ways,

THEREFORE, BE IT RESOLVED, That a copy of this resolution be sent to each of the parties.

9. WHEREAS, those engaged in the business of raising farm products have in the recent past and through no fault of their own, suffered grave and in many cases, irreparable financial losses by reason of the default of debtors who purchased large parts of their annual money crops, and such losses in some cases representing almost the entire efforts of such producers, and

WHEREAS, it appears that such losses are really to be sustained again and again in the future unless some active energetic and practical steps be taken to prevent them, and

WHEREAS, such individual losses are great losses to the community at large by reason of diminished purchasing power, and the continuation of such losses must eventually reduce any industrious farmer to insolvency and deter the young men of this state from entering the business of raising farm products thus imperiling the future of agriculture in this state and bringing great injury thereto. Now,

THEREFORE, BE IT RESOLVED, That the Maryland State Poultry Council go on record as standing ready to approve, and it does hereby approve, any investigations tending to lay bare the cause of all the evils above mentioned and tending to provide remedies therefore, and

BE IT RESOLVED, That the Maryland State Poultry Council does hereby endorse any legislation the purpose and effect of which will be to prevent the recurrence of such evils and restore to agriculture that morale and economic security in which it formerly abounded; and particularly to endorse and urge the enactment of certain laws to be put before the legislature of Maryland, the purpose of which is to suppress certain unfair and injurious practices within this state, and prevent financial losses in the marketing of farm products by requiring canners and their agents to be licensed by the State Board of Agriculture, which bond shall run to the benefit of growers of products and be the growers' security for the payment to them of all sums which may be due and owing from canners as the purchase price of products sold to such canneries.

10. Resolution on Donation by Maryland State Fair Board

WHEREAS, the Maryland State Fair Board has made available the sum of $100 for the purchase of the very fine motion picture in color on the consumption of eggs,

THEREFORE, BE IT RESOLVED, That the Maryland State Poultry Council expresses its sincere thanks to the Maryland State Fair Board for its generous donation.

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